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JOURNAL.

THOS. F. RUMBOLD, M. D.,

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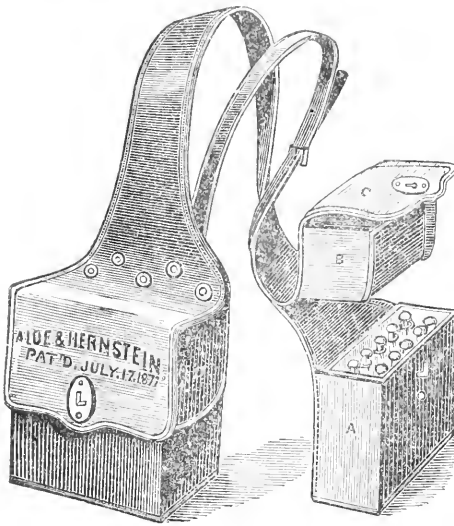
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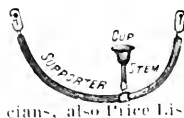
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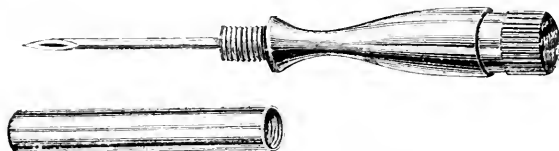
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Notice to Contributors and Correspondents.

Articles intended for publication in the next number should be forwarded one month prior to the date of publication. They must be contributed to this Journal exclusively.

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Foreign exchanges and books for review should be sent under cover to Messrs. Williams & Norgate, 14 Henrietta Street, Covent Garden, London; or to Herr B. Hermann, Leipzig; or M. Charles Reinwald, 15 Rue des Sts. Peres, Paris.



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The correspondence of the *Journal* has been placed upon a secure and permanent footing, able writers having been selected to discuss subjects of medical interest at all important centers. Reports of local medical societies are secured from all parts of New England; all national societies are also carefully reported.

The editorial management will be under the control of Dr. J. Collins Warren, assisted by Dr. A. J. Mason, Dr. George B. Shattuck, and Dr. C. F. Folsom. It will still be the aim of the staff to make the editorial articles equal in value to those of the best weekly medical journals. Care will be taken to supply the latest and most interesting items of medical news.

As this journal endeavors to represent the practice of the country districts as well as of cities, contributions from both sources will be gladly received, and the interests of all will be supported with the impartiality to be shown only by a journal independent of any school or faction.

The following articles will appear early in the year:

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It is prepared after a thoroughly tested and scientific method. Dispensed in 16oz. bottles, retail at \$1.50 each.

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COD LIVER OIL.

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A most useful, convenient, and economical preparation always ready for immediate use. Clean, prompt in its action, and keeps unaltered in any climate, easily transported and pliable, so as to be applied to all parts and surfaces of the body. It is prepared of two strengths:—No. 1, of pure mustard; No. 2, of half mustard. Each kind put up separately, in boxes of 10 plasters. Price, 40 cents.

DIRECTIONS.—Lip the plaster, a minute or two, in cold water, and apply with a band.

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This Elixir contains Iodine, Pyrophosphate of Iron, the active principle of anti-corbutic and aromatic plants, and acts as a *tonic, stimulant, emmenagogue, and a powerful regenerator of the blood*. It is an invaluable remedy for all constitutional disorders due to the impurity and poverty of the blood. One of the advantages of this new preparation consists in combining the virtues of Iodine and Iron, without the irky taste of Iodide of Iron.

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Used with great success against nervous and convulsive coughs, Whooping Cough, Acute Bronchitis, Chronic Catarrh, Influenza, &c.

Wakefulness, Cough, and other sufferings in Consumption, are greatly relieved by the soothing and expectorant properties of this paste.

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SOLE GENERAL AGENTS.

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FOR SALE BY DRUGGISTS GENERALLY.

PARIS, 1867.



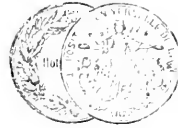
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VIENNA, 1873.



Medal of Merit.

It is sold in 1 oz., 8 oz., and 16 oz. bottles. Beware of so-called French Pepsines bearing fictitious names. Ask for and take only Boudault's.

PHILA. 1876.



Medal of Merit.

E. FOUGERA & CO., New York, Agents.

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A laxative, refreshing, and medicated Fruit Lozenge, agreeable to take, and never causing irritation. Its physiological action assures the immediate relief and effectual cure of **CONSTIPATION**, **CEREBRAL CONGESTION**, **HEADACHE**, **INDIGESTION**, **BILE**, **HÆMORRHOIDS**, etc., etc., by augmenting the peristaltic movement of the intestines without producing undue secretion of the liquids. Unlike pills and the usual purgatives, it does not predispose to intestinal sluggishness, and the same dose always produces the same effect, that is to say, never needs increasing. These properties render "Tamar" invaluable to the weak and debilitated, and especially to ladies previous and subsequent to their accouchement. It is recommended by the most eminent Physicians of Paris: notably Drs. BÉGIN and TARDIEU, who prescribe it constantly for the above complaints, and with most marked success.

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The New Digestive, is a combination of whole digestive secretions---Pepsine, Pancreatine, Diastase, &c., forming an invaluable remedy in the treatment of all forms of Dyspepsia, and all diseases arising from imperfect nutrition.

N. B.—The success of this Remedy has led to several imitations of it, which consist largely of Milk Sugar, and, as compared with Peptodyn, are of little or no real value as digestive agents.

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Agents for America---**E. FOUGERA & CO., New York.**

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800 Washington Ave., St. Louis.

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Soluble Gelatine-Coated Pills and Granules, Official and Standard Formulæ.
[New Apparatus and Improved Process.]

The experience of physicians have fully convinced them of the unreliability of the ready made pills found in the market. But few, if any, of the commercial varieties fill the expectations of prescribers. The cause of this uncertainty lies partly in variability of composition, inferiority of the drugs used and deterioration from long standing. In view of these defects, and at the same time a desire to furnish the profession with strictly reliable and well made pills, we have entered upon the manufacture of **Gelatine Coated Pills** and **Granules** in the **Soluble form**, which we warrant to be compounded of the best materials, and to contain the quantities required by the formula.

Powers & Weightman's Bleached Sulphate of Quinine is used in all our Quinine pills.

Per 100				Per 100			
PIL: QUINLE SULPH: 1-2 gr.	-	-	\$1 25	PIL: QUINLE COMP. et STRYCHINLE	-	-	\$2 25
" " 1 gr.	-	-	2 15	{ Quinia Sulph: 1 gr. }			
" " 2 gr.	-	-	4 00	{ Ferri Redact: 1 gr. }			
" " 3 grs.	-	-	6 00	{ Acid: Arsen: 1-50 gr. }			
" ARSENIC et NUC VOMICE.	-	-	2 25	{ Strychnia: 1-60 gr. }			
{ Quinia Sulph: 1 gr. }				PIL: QUINLE et FERRI CARB.	-	-	2 25
{ Acid: Arsen: 1-60 gr. }				{ Quinia Sulph: 1 gr. }			
{ Ext: Nuc Vom: 1-4 gr. }				PIL: QUINLE et FERRI LACT: COMP.	-	-	2 25
PIL: QUINLE COMP: -	-	-	2 25	{ Quinia Sulph: 1 gr. }			
{ Quinia Sulph: 1 gr. }				{ Ext: Lactat: Amar: 1-2 gr. }			
{ Ferri Redact: 1 gr. }				{ Ferri Lactat: 2 grs. }			
{ Acid: Arsen: 1-50 gr. }				PIL: QUINLE et FERRI et STRYCHINLE	-	-	2 25
				{ Quinia Sulph: 1 gr. }			
				{ Ferri Redact: 2 grs. }			
				{ Strychnia: 1-60 gr. }			

Pills of Cinchonidia Sulphate and Combinations.

PIL: CINCHONIDLE SULPHATE, 1 gr.	\$ 60	PIL: CINCHONIDLE FERRI et STRYCH	\$1 25
" " 2 gr.	1 00	{ Cinchonid Sulph: 1 gr. }	
" " 3 gr.	1 50	{ Ferri Redact: 1 gr. }	
" " 5 gr.	2 50	{ Strychnia: 1-60 gr. }	
" COMP: -	1 25	PIL: CINCHONIDLE et FERRI CARB.	1 25
{ Cinchonid: Sulph: 1 gr. }		{ Cinchonid: Sulph: 1 gr. }	
{ Ferri Redact: 1 gr. }		{ Ferri Carb: 2 grs. }	
{ Acid: Arsen: 1-50 gr. }			
PIL: CINCHONIDLE COMP. et STRYCH	1 25		
{ Cinchonid: Sulph: 1 gr. }			
{ Ferri Redact: 1 gr. }			
{ Acid: Arsen: 1-50 gr. }			
{ Strychnia: 1-60 gr. }			

Phosphorus Pills and Combinations.

A coating of Soluble Gelatine is now considered the best covering for phosphorus pills.

PIL: PHOSPHORI, 1-50 gr., 1-25 gr.	\$1 00	PIL: PHOS: QUININLE et NUC VOM: 2 75
" " 1-100 gr.	1 00	{ Phosphori: 1-50 gr. }
" " COMP: -	1 25	{ Quinia Sulph: 1 gr. }
{ Phosphori: 1-100 gr. }		{ Ext. Nuc Vom: 1-4 gr. }
{ Ext. Nuc Vom: 1-1 gr. }		PIL: PHOS: FERRI QUINIA et NUC VOM: 2 75
PIL: PHOSPHORI COMP. et FERRI: -	1 25	{ Phosphori: 1-100 gr. }
{ Phosphori: 1-100 gr. }		{ Ferri Carb: 1 gr. }
{ Ext. Nuc Vom: 1-1 gr. }		{ Quinia Sulph: 1 gr. }
{ Ferri Redact: 1 gr. }		{ Ext. Nuc Vom: 1-4 gr. }
PIL: PHOSPHORI et NUC VOMIC.E., -	1 25	PIL: ZINCI PHOSPHIDI et NUC VOM: 1 00
{ Phosphorus: 1-50 gr. }		{ Zinci Phosphidi: 1-10 gr. }
{ Ext. Nuc Vom: 1-1 gr. }		{ Ext. Nuc Vom: 1-1 gr. }

According to M. Vigier, of Paris, Phosphide of Zinc mites in itself the character of an excellent medicine, and appears well adapted to replace all other combinations of Phosphorus. It is readily attacked by the acids, even by lactic acid, which will explain its ready assimilation in the stomach.

The chemical formula of this substance is PZn_3 , and consequently a grain represents a little more than one-seventh of a grain of Phosphorus; the proper dose, therefore, is about the tenth of a grain.

The power of Phosphide of Zinc in counteracting nervous affections that have their origin in exhaustion or depression of the nervous forces, is now beyond a reasonable doubt. When properly administered and persistently persevered in, its curative value in these classes of cases is sufficient to merit the attention and confidence of the profession at large. Having none of the disagreeable effects of Phosphorus, its rapid absorption into the circulation, its mild stimulant and tonic influences on the nervous centers, recommend it as a valuable curative agent in all forms of disease requiring phosphorus for their cure. *—St. Louis Medical and Surgical Journal, Sept., 1856.*

This valuable remedy in the form of Gelatine coated pills, was originally introduced by us, and the cures reported in the various medical journals, were produced by those of our make.

Subject to discount, complete price lists sent on application.

Specify our make on all orders. Physicians' orders have careful and intelligent attention.

Analyses of Sulphate of Quinine Pills.

As we have repeatedly notified the trade, our Sulphate of Quinine Pills are made of Bleached Quinine and contain the correct amount of Quinine Sulphas, as represented on the label.

We submit below three analyses of our Sulphate of Quinine Pills obtained at different druggists; the first was made by Mr. Chas. Rice, of New York, one of the editors of the "*New Remedies*," and chemist of Department Public Charities and Correction of New York City, who is well known both personally and by reputation by a large number of physicians and druggists throughout the country. The other two analyses are by Dr. Polenske, former assistant of Prof. Sonnenschein, of Berlin, and now our own analytical chemist.

Our "Hospital Quinine" Pills are made as set forth in our circular of March 27th, which we reprint for the information of those who may not have seen it before.

With the assurance to the trade and medical profession, that we will always manufacture our preparations, as we have in the past, in **perfect good faith**, that we will use the best materials obtainable, increasing our knowledge by every means in our power, for examining and testing all ingredients and perfecting our business, we remain,

Very respectfully, **McKESSON & ROBBINS.**

NEW YORK, APRIL 17th, 1878.

"MESSRS. McKESSON & ROBBINS,

Gentlemen:—Having been requested by you to make an assay of the alkaloids contained in your Gelatine-Coated Quinine Pills, I purchased an original vial, containing 100 2 grain pills, in the store of Mr. Theodore Cole, 409 First Avenue, New York. Each ten of these pills weighed very nearly 34 grains, and the weight of the single pills is very uniform, varying but slightly either way from 3.4 grains. The whole number of pills, (100,) yielded 148.85 grains of anhydrous alkaloid, which was found to be **pure, White Quinia**, free from other cinchona alkaloids. This amount of dry Quinia corresponds to **203.8 grains of Sulphate of Quinia**, containing 8 molecules of water of crystallization ($2 C_{20} H_{24} N_2 O_9 \cdot H_2 SO_4 \cdot H_2 O$); or to **201.7 grains of Sulphate of Quinia**, containing 7½ molecules of water of crystallization ($2 C_{20} H_{24} N_2 O_9 \cdot H_2 SO_4 \cdot 7\frac{1}{2} H_2 O$), which latter is, as near as possible, the formula of the commercial pure Sulphate of Quinia. The amount of Sulphate of Quinia contained in the 100 pills examined, is therefore a trifle **in excess** of the required quantity, (3.5 grains, or 1.7 grain, according to whatever formula may be adopted for the crystallized salt).

Respectfully, **CHARLES RICE,**
Chemist, Bellevue Hospital, N. Y.

NEW YORK, MARCH 30th, 1878.

"I have analyzed McKesson & Robbins' Gelatine-Coated 5 grs. Sulphate of Quinine Pills, from an original bottle of one hundred, and find that in two analyses of 10 pills each, the result in both cases was 51 grains of pure Sulphate of Quinine.

ED. POLEN-SKE, Ph. D."

NEW YORK, APRIL 13th, 1878.

"One hundred McKesson & Robbins' Gelatine-Coated 2 grs. Sulphate of Quinine Pills, analyzed by me to-day, contained 19½ grains of Sulphate of Quinine. The Sulphate of Quinine obtained from these pills stood the Ether test, as bid down in the U. S. Ph.

ED. POLEN-SKE, Ph. D."

Circular of March 27th, 1878.

Since we changed, last fall, from Unbleached to Bleached Quinine in the manufacture of our Pills, we have heard from a large number of druggists and physicians stating that the therapeutic effects of the dark pills were better than the "bleached," dose for dose, where a tonic was indicated, and the antiperiodic effects of the former were as well marked. We made the change because we were disappointed in obtaining a uniform article of unbleached quinine, were deceived in two shipments we received and the analyses of samples from the same package we submitted to different highly reputable chemists varied surprisingly, in fact, analysing Quinine *quantitatively* is very difficult, as it depends very largely upon the different solubilities of the alkaloids in water, while the *qualitative* analysis is very simple and reliable.

The curative properties of the other alkaloids of Cinchona Barks have been well attested and the effect of the **combined alkaloids** has been repeatedly asserted to be greater than that of any **one alone**.

In view of these facts, we accordingly propose to offer Pills made of Hospital Quinine, which differs from that which has been known and understood as "unbleached," in the process of manufacture and in the proportion of Quinine. This Hospital Quinine will contain about 50 per cent. of Quinine Sulphate, and the balance, Cinchonidia Sulphate and traces of Quinidia Sulphate; the Cinchonidia Sulphate, being less powerful than the other alkaloids is separated.

These pills on account of their lower price will relieve a difficulty, to which a large number of people living in malarious districts have been subjected—the inability to purchase Quinine Pills on account of price, especially when scarcity causes sudden and great advances, as at present—at the same time we believe that confidence may be felt on experiencing equal relief with similar doses.

We will continue, as now, to make our "Quinine Pills" of Bleached Quinine, and the white color will readily identify them from our darker Hospital Quinines, which will be labelled "Hospital Quinine." The list of Hospital Quinine Pills we submit below is subject to same discount as our other pills, and will be reduced as soon as the market on Quinine will allow. We call special attention to our Pills of Cinchona Bark Alkaloids, which contain a definite quantity of each of the four alkaloids, one-half grain each Sulphates Quinia, Quinidia, Cinchonia and Cinchonidia.

We annex below list of our Pills of other Cinchona Alkaloids, and remain, soliciting your correspondence and valued orders.

Yours respectfully,

March 27th, 1878.

McKESSON & ROBBINS.

Pills of "HOSPITAL QUININE" and the Cheaper Alkaloids.

"HOSPITAL QUININE," ½ gr.	70	3 25	Cinchonidine, ½ and 1 gr.	60	2 75
"HOSPITAL QUININE," 1 gr.	85	4 00	Cinchonidine, 3 grs.	75	3 50
"HOSPITAL QUININE," 1 gr.	1 40	6 75	CINCHONA BARK ALKALOIDS. 2 00		
"HOSPITAL QUININE," 14 grs.	1 90	9 25	Quinine Sulphate, 1 gr.	1 25	9 75
"HOSPITAL QUININE," 2 grs.	2 50	12 25	Quinidine Sulphate, 1 gr.	1 25	
"HOSPITAL QUININE," 3 grs.	3 75	18 50	Cinchonine Sulphate, 1 gr.	1 25	
"HOSPITAL QUININE," 4 grs.	4 50	22 25	Cinchonidine Sulphate, 1 gr.	1 25	
"HOSPITAL QUININE," 5 grs.	6 00	29 75	Cinchonina, Sulphate, 3 grs.	1 00	4 75
Quinidia, Sulphate, 1 gr.	80	3 75	Cinchonidia, Sulphate, 1 gr.	60	2 75
Quinidia, Sulphate, 2 grs.	1 50	7 25	Cinchonidia, Sulphate, 2 grs.	1 00	4 75
Quinidia, Sulphate, 3 grs.	2 20	10 75	Cinchonidia, Sulphate, 3 grs.	1 50	7 25
			Cinchonidia, Sulphate, 5 grs.	2 50	12 25

SEND FOR FORMULA BOOK AND PRICE LIST OF PILLS

TO PHYSICIANS AND DRUGGISTS.

The subject of Unbleached and Hospital Quinine has been so much discussed of late and appears to be so little understood that it is deemed proper to submit the following, which is in accord with our best knowledge and experience in the purchase and use of this article, for it should be remembered that the processes used in the manufacture of Quinine in all countries are kept secret by the various manufacturers, who are a limited number, and said to be comprised within about fifteen establishments of much importance.

Bleached Sulphate of Quinine is recognized as pure, when it will bear what is called the Ether test, which, while it is not an absolute standard, is the recognized and accepted test, and should be applied, in accordance with the directions of the U. S. Pharmacopeia, to all White or Bleached Sulphate of Quinine.

Unbleached Quinine has been regarded with favor in pharmaceutical manufactures, because it has been usually quoted by our manufacturing chemists at from 30 to 40 cents per ounce cheaper than the Bleached, and there has existed among many physicians a prejudice in its favor, as a more natural preparation even if it did contain a small percentage of the other alkaloids of Bark. It has been used in general by many of our best and most accomplished pharmacists under this supposition, and was used by us extensively until last Fall, when our experiments in manufacturing Quinine from Bark and recovering Quinine from Gelatine-Coated Pills (which we had from time to time rejected on account of irregular shape or imperfect coating, taught us in reality that our previous methods of analysis and determination of this important salt were defective, further that there were in market two quite distinct articles in proportion of constituents, the one being evidently an arrested manufacture, or Quinine as the result of probably a single crystallization, in place of four as usually required to separate completely the Cinchonidia and Quinidia and bring the result up to the Ether test; and another article, the result of concentration and crystallization of the so-called mother waters, used in successive crystallizations as before explained, which carries, with the salts of Cinchonidia and Quinidia in solution to be eliminated, a nearly equal amount of Quinia, the result being, always, as far as our experience goes, from 35 to 45% of Quinia Sulphate in combination with Cinchonidia Sulphate mainly, and a small portion of Quinidia Sulphate.

This latter article, which we have denominated Hospital Quinine, to distinguish it from the first described unbleached (although the terms have often been applied synonymously), we have reason to believe was sent us in the last shipments we received; notwithstanding the manufacturer's contract and our former erroneous method of analysis to the contrary.

The discovery of these facts, on our part, for the first time last Autumn, led to consultation with several distinguished chemists and pharmacists, and the whole ground was carefully reviewed and examined, and the conclusion arrived at was, that all ordinary tests in inexperienced hands for quantitative analysis of Quinine, when it was in natural combination with the other alkaloids of Cinchona Bark, could not be relied upon, and the only safety in general pharmaceutical manufacture consisted in the use of Bleached or White Quinine.

This determination was announced by us last Fall in the various journals, as was supposed, in sufficient explanation, it having always been our custom to fully explain and inform the trade in regard to our methods of business, which are always open.

We regret only that we are not able to give more specific and positive additions to knowledge about this matter of Quinine and the other Cinchona alkaloids, because it deserves and is receiving very much attention and investigation at the hands of physicians and chemists as one of the most valuable of all remedies, and that, since our change from Unbleached to Bleached Quinine, last November, evil-disposed persons have taken occasion to misrepresent and misconstrue the facts for selfish purposes. There are fortunately a few facts that cannot be misconstrued. From our first connection with the inventor of the machinery for making Gelatine-Coated Pills, which commenced with the furnishing of materials for manufacture to the inventor in 1871, till November 24th, 1877, only Unbleached Quinine was used, and it was as carefully examined, as could be, by various analysts until 1876, when our present analyst entered into our employ, highly recommended for general knowledge and experience, and deservedly so outside of Quinology, which is the most difficult of subjects, because of variety in raw material and in alkaloids, that are so very similar as to be most difficult of entire separation.

Since November 24th, 1877, we have **only used Bleached Sulphate of Quinine** in our Sulphate of Quinine Pills, as stated in our circulars.

We will remark that we believe, as the result of much experience, that a natural combination of the alkaloids of Cinchona Bark in good proportion is a better therapeutic for general use than any single alkaloid separated, and we attribute much of the favor attending our peculiar form of coating to the use of Unbleached Quinine, as employed up to November last in the proportion of 111 ounces (more or less, according to our then supposed analysis) in place of 100 ounces of Bleached, as has been formerly carefully explained, but we defer this subject to the experience of the physician, being out of the province of the druggist.

It is the duty of the druggist and pharmacist to be well informed and not to misrepresent or conceal any fact in experience in manufacture or investigation, and we will be pleased to do this at all times, when called upon, as only thus can knowledge be advanced or confidence maintained, hence this article, which is respectfully submitted.

THE
SAINT LOUIS
MEDICAL AND SURGICAL
Journal.

VOL. XXXIV—JUNE, 1878—No. 6.

Original Contributions.

ARTICLE XLIV.

GENESIS.—VI. By HIRAM CHRISTOPHER, M. D., of St. Louis.

The scientists who believe that living beings and psychical phenomena owe their primary existence to the operation of physical forces through a process of evolution, do not seem to stagger at such a preposterous and absurd conclusion. They seem equal to any demand of their theory. This is courageous if not rational. On their hypothesis all psychical phenomena are but the outcome of a force that was as really present in the fires of the sun as were the purely physical forces. In the absence of all possible proof this must be regarded as an assumption; for what is not, or cannot be, proved, is unquestionably the purest assumption. There is nothing absurd in the statement that physical forces were present and active in the fires of the sun, for they are never found isolated from matter. Their existence under such circumstances can be demonstrated. But who can show by any process or experiment that the psychical agent is even present in the fires of the sun; either now or was at any previous time? It can be proved that physical forces are now active in the fires of the sun; but can it be shown that the psychical or life-agent is there; either alone or in connection

with any other? The fires of the sun are still so intensely hot as to keep metals in a state of vapor in the gaseous ocean that envelopes that intensely heated luminary. All are not yet condensed to the solid state. The spectroscope has told us that many metals are yet vapor in its heated atmosphere; but it has given no indication as to the presence there of the life-agent; and it has long been known that the electrical force often sweeps in storms over that vapory ocean. By no process of investigation or mode of experiment can men prove the presence of this agent there, isolated or in connection with any other. If it was ever there, was it capable of being detected? If its presence cannot be demonstrated now, is it not the purest assumption to say that it ever was there? The scientist has not yet detected mind in that fiery mist, and no fear need be entertained that he ever will. And why not? Has it all been expressed during the process of refrigeration, or absorbed by the psychical beings of this or other worlds? If mind in its germ-force were ever in the fires of the sun, either actually or potentially, it is there yet; and if its presence were ever demonstrable, it is still demonstrable; and until its presence is proved, we are justified in rejecting the material origin of living beings as unadulterated assumption, and the conclusion based on it, as too nebulous to be entitled to be considered even an inference. It is hardly necessary to say that assumptions and inferences, though made by scientific men, are not scientific truths. In these respects the theory of evolution stands without a rival in absurdity, though originated and advocated by men of unquestionable scientific attainments. This is a wonderful psychical phenomenon. Physical forces never err so much as to be guilty of an absurdity. The absurdity of the theory is a proof of the non-physical origin of living beings, and demonstrative of the fact that the work and operation of the life-agent are categorically different from those of physical forces.

In the preceding number we reached the conclusion, logically legitimately, that the religious sense of mankind suggests an object of worship for man in every respect his superior, and worthy of his worship. Connected with the sentiment of worship is the idea of reward and punishment in another world, and the consequent belief in the resurrection of man from the dead, as an essential preliminary to the bestowment of rewards and the infliction of punishments. If all our art and poetry, and

science, and philosophy are the outcome of the evolutionary forces regnant in the cosmic vapor or fires of the sun, then we must add to these the belief in a future life, and of bliss and misery in that state of existence. We find such a belief among mankind; and any hypothesis that attempts to account philosophically for the psychical phenomena of animals and the same in man, must embrace the beliefs of mankind, and account for them on satisfactory principles. If the material hypothesis can do this, that hypothesis is true. If it cannot do this, it is not true. So absurd a claim that it can do this, will not be preferred by any one, when these beliefs refer to another state of existence, and imply the existence in a man of a being that is both *extra* and *super*-natural.

As respects the anticipation of another life, and of rewards and punishments in that world of renewed being, we have facts as the ground of our conclusions. The expectation and, indeed, the unwavering conviction on the part of the most intelligent of the race and in the most enlightened periods of human history, that man will live after the death of his body, assure us that there is, and of necessity must be, in him a being that can and will live after its separation from the body by death. Now, how can the scientist account for the presence in man of this distinct being, or, denying it, as he must and does, how account for the conviction of its being a fact? If he shall say that the conviction is a delusion, or at best but an inference, such an assertion does not dispose of the difficulty. We would suggest that such an assertion would come with a very bad grace from one who believes that mind is the product of physical forces. Under what greater delusion can the mind rest than this, or what more groundless inference can a rational man draw?

Without pressing further the necessity under which the scientist lies of accounting for the presence in man of a spirit-being which will survive the death of his organism, I purpose now to make this fact the starting point for looking further, and the occasion of inquiring whether or not the presence of this being in man was not the objective point contemplated at the beginning, and the end aimed at by the differentiations of the organic kingdom that mark the progress of living organisms on the earth? That man closes the series of organized beings on the earth there can be no question, unless some new plan of structure shall be introduced. But as no new plan has been developed

up to man, we may be safe in affirming that none other will yet be. The present plan does all that can be done with organized beings as respects their relations to the inorganic world and to one another. These relations are perfect; the organism of man meets the inorganic world at all possible points of connection, and in all possible ways. It is, therefore, evident that no other plan of structure or higher development of that plan can take place. More than this cannot be done. Therefore man's organism being the highest *in esse* as well the highest *in posse*, he must close the long series that we find stretching along the pathway of life on the globe from the paleozoic age to the present. This being so, his is the proper organism with which to connect the present sphere with that beyond the grave, by placing in him a spirit-being who holds with this life only a temporary connection. This fact, or hypothesis, if the scientist will, throws a flood of light on all the past history of the world, and on all the phenomena of the present, and develops to the view a purpose that had its initial point in the creation of matter, and its end in the world to come.

The scientist cannot reject the doctrine of teleology as taught by the facts and phenomena of the organic world. He speaks of design and purpose as manifested by the structure of animals, and its adaptation to the wants of the animal, and the conditions in which it is found existing. In the pectoral fin of the fish, he tells us, he sees the wing of the bird, the foreleg of the quadruped, and the arm of man, the modification of structure arising from, and depending on, the purpose to which it is applied, and the conditions in which it was designed to live, the ultimate object being to place the animal in perfect connection with the world in which it lives. This perfection, as I have said, is found in the organism of man, and hence he is found to close the series. And as he is found to be the connecting link between the present life, and that which shall appear beyond the close of this, there is also found in him what is not found in any species below him. We have, then, a teleology that looked from the beginning to the coming of man, and then from him to the development of a purpose with man which looks to the religious wants of his being, and explains all that went before him from the first appearance of life on the earth to the close of man's existence in this world.

The scientist may object that such reasoning trenches too

much on the religions to be scientific, or to pertain to matters purely scientific, with which he only claims to deal. This objection is presented only when the argument is pressed in the wrong direction. To erect an hypothesis on fiction, and to reason as mad men is all right and proper, and perfectly germane to science, when the object is to overturn or discredit revealed religion. Virchow has lately said, when speaking of the theory of evolution, and of the propriety of its being taught in the schools, "How could it be conceivable that a doctrine of such moment, which lays hold of every one's mind as a complete revolutionary force, *which is nothing short of forming a new religion*, should not be imparted in its completeness into the scheme of our schools?" It is right in scientific men to teach an hypothesis which is virtually a new religion in the estimation of men who understand the premise and logic of the theory; but it is unscientific to even look in the direction of the only rational religion that man can have. Any view that interposes a *creator*, or that regards the world and its organized beings as a *creation* is, in the estimation of modern scientists, the introduction of religion into the domain of science. But Virchow thinks that the doctrine of evolution is a new religion; and as this theory is regarded as preeminently scientific, what is its introduction, but the introduction of religion? It would, therefore, appear that the real objection lies against the *kind* of religion, and not against the thing itself.

The hypothesis of creation and the doctrine of teleology, as well as the true views of the development of organized beings on the earth, place the end of all this development in the structure of man, in whom the systems of this world hinge on the system that develops the real and true purpose of the creation of man and of the world of which he forms a part. For the wide difference that exists between man and the highest animal below him; for the broad and deep chasm which his organism has made between him and the highest preceding him; and for such an abrupt termination of the plan and development of structure, the scientist can offer no rational explanation. His theory of evolution has a break here which cannot be mended, a termination which was not, and could not have been, anticipated. The true reason lies outside of the domain of physical science, but the reason is none the less real and substantial on that account. The fact is the evidence of a design that had its

origin prior to the existence of even matter itself; for a logical connection can be traced between the existence of matter and the appearance of man—the initial and terminal points of all mundane creations. The proof is not wanting to show that man was the grand and primary conception which made the existence of the material and organic systems of this world, if not all worlds,* a physical and logical necessity. It can be, and has been shown that he is the grand ideal of the whole system of organized beings, to which all the differentiations of the system pointed as their end and purpose; and that his organism completes the system, and ends all further differentiation of structure; so that beyond him there is no possible advance or improvement on his organism.† This ideal was present in the beginning, and all through the geological periods of the world's history. When it appeared, the series closed. Hence, purpose and design mark all differentiations of structure. Every advance points to another in the future, and this upward progression continues until the ideal is realized. He is the sun of the living world, whose light illumines all the past, and makes evident the design of all that preceded him.

The methods by which this end is attained are equally proof of design, and so strange and wonderful as to mark the appearance of living beings on the earth as wholly a supernatural event. The growth and reproduction of living beings are phenomena so familiar that they excite no wonder in the mind of any but the most thoughtful. Yet there are no more mysterious phenomena in the world; and were an intelligent being who knew only of the phenomena of the inorganic world, to look on these for the first time, they would be to him the greatest of wonders. No substance of the material world was ever known to absorb another and convert it to a part of its own structure, itself remaining unchanged. If iron absorb oxygen, the oxygen does not become iron, nor the iron it. A true *tertium quid* is formed wholly unlike either. Nor does the iron, like an organism, absorb more than it can unite with its particles. Nor do we find the iron or its oxide reproducing its like. Growth and reproduction, therefore, differentiate the organic world.

With the growth of the individual is connected the differen-

* See Whewell's *Plurality of Worlds*.

† Essay on Classification, pp. 31, 103-7.

tiations of the species. From the microscopic cell, the initial point of the individual, to the perfection of growth, structural differentiations appear with a uniformity and certainty that can find no explanation in the operation of laws purely physical. Under all physical conditions, and during all the ages of the earth, species have always proved to be immutable. No internal or external force or cause has ever transformed one into another. And not only this, but no branch or class, or order or family, or germs has ever been confounded or changed to another. As these appeared in the beginning they appear now, no more in number and no less, and of no different type, only as respects species, and in these we observe the differentiations of the system of organized beings. In this differentiation we observe the development of the system that had man in view; so that all the different species of past geological ages were but so many steps toward the realization of the conception of man, which gave origin to the whole series that mark the numerous creations of the geological ages, the outlines of that system which is repeated in the animals that now live on the earth, and whose existence is connected with the appearance and wants of man. That is to say, looking at all the various types as they successively appeared on the earth as constituting the system of organized beings, we find a parallellism running between the types of the past and the types of those now existing. And not only this, but there is also a parallellism existing between these and the embryonic development of the living species. On this subject Agassiz says, "that the leading thought which runs through the succession of all organized beings in past ages, is manifested again in new combinations in the phases of development of the living representatives of these different types."* How did this happen? Is this the work of blind forces? Is it not rather unquestionable evidence of the presence and action of a creator, who, in all these differentiations, of the entire system of organized beings, is working toward the ideal in his mind, to which all these various types of structure are but the phases of the development of that ideal?

But these parallellisms are not all that exhibit the wonders and deep design, so clearly apparent in the phenomena of the system of organized beings, as this is developed by the species

* Essay on Classification, p. 175.

that characterize the various periods of the earth's long and wonderful history. There is a parallism between the structural gradation of animals and the phases of their embryonic growth, and between these and their geographical distribution. Such is the statement of Agassiz, sustained by an array of facts that is both surprising and convincing. Now, how is it possible to believe that all these relations, which animals are found to sustain toward one another, and to the physical conditions by which they are environed, were the result of accident, and not rather the determination of intelligence? To do so, would be to discard all such things as design, purpose, and intelligence. But this cannot be done. We know that men have designs and purposes, and work for their accomplishment. They have conceptions and ideals, and form plans, and all mankind, of sufficient intelligence to distinguish right from wrong, recognize these as proofs of intelligence, and grade the intelligence by the grade or character of the design. The world is persuaded, modern scientists included, that intelligence is the author of all design and purpose,—that teleology is an unquestionable proof of intelligence; and no amount of sophistry can overturn the universal conviction. If we see design and purpose in the phenomena of the world, these are the proofs that intelligence, and not blind physical forces, is the cause of such phenomena. Was the succession of animals as respects phases of development, during geologic ages; was the gradation of structure that characterizes the series, but the result of physical forces, or the determination of intelligence? How was it possible for physical forces to have so gauged their work as to have presented the successive phases of development, or to have determined the time when new species should make their presence on the earth? We know that air-breathing animals did not make their appearance until the atmosphere had been so freed from carbonic acid by the action of plants, as to allow of aerial respiration. Did such a physical condition determine their appearance? Physical conditions of a certain kind were indeed necessary forerunners of certain species, but could they have been the sole originating cause of their existence? To suppose that physical agents could have been the authors of all the phenomena presented by the organic world from its inception to its close, is to take a final leave of reason.

The origination of the animal world in various geographical

centers; of the same species in widely separated centers of creation, when viewed in the light of the facts that man closes the series, and presents but one species of one genus, is a very remarkable fact, if such a distribution has in it no evidence of design or purpose. Do we not see in this fact the design to supply man with the animals necessary for his uses, so far as they contribute to his wants? Or do we see only this fact that like causes produce like effects?—That the same species are represented in different parts of the earth because like physical conditions obtain in these various centers? If the latter, as the evolutionist believes and holds, then why did not the human species appear in various centers? Why was their origin placed in the western part of Asia? Why did not pairs appear in Africa, Europe, and North and South Americas? Are we to understand that only one portion of the earth was capable of giving origin to the species, because of its peculiar physical conditions? If that was the case, how has it happened that he can be born and reared in every portion of the earth? The geographical distribution of animals, and the origination of mankind from one pair and in one center, are proofs that he is, in some way, the end and reason of the many diversified facts which the history of the organic world presents. This being so, we have in his animal organism an abrupt termination of the progressive development of the system of organized beings, and the end and purpose of the creation of this system; and in the spirit being which dwells during life in this organism, the beginning of other designs, foreshadowed by the existence of this spirit being, and the psychical phenomena which he presents, which no human philosophy can possibly explain. Hence, as it is now unquestionable that man constitutes the link that connects the systems of this world with designs and purposes that concern him after death, he, as well as the entire system of the universe, must have had his origin in the mind of a being of infinite intelligence, and owe his existence to a power omnipotent; to a being capable of devising and executing a system that surpasses man's utmost powers to understand, and whose phenomena hold his mind with constant and increasing admiration of the wisdom and intelligence that displays, in the midst of infinite diversity, the consistency and unity of system.

ARTICLE XLV.

MEDICINE, PRESENT AND FUTURE. By J. W. COMPTON, M. D.,* of Evansville, Ind., Professor of Mat. Med. and Therapeutics.

MR. PRESIDENT, LADIES AND GENTLEMEN, AND MEMBERS OF THE GRADUATING CLASS:

Through the courtesy kindly extended by the faculty of the Medical College, I have been selected to deliver the annual address.

I am deeply sensible of the compliment conveyed by my colleagues in selecting me for so important a duty.

I desire to invite your attention to some thoughts on "Medicine, Present and Future." It is perhaps due to medicine of the past that I should bestow upon it a brief retrospective glance, in view of the venerable claim its ancient name, more than its correct principles or scientific achievements, has upon us.

Deserved encomiums have been justly lavished on the ancient founders of medicine, as each in his day dispelled some part of the murky clouds of superstition and ignorance that enveloped the dark ages in which he lived.

Far be it from me to even desire to pluck one star from the crown that encircles the brow of any ancient founder of our noble profession; but when I compare the complete and masterly works on the science of medicine of to-day with those of the ancient writers, the latter appear as very absurd rubbish, as glaring and abominable errors, furnishing a sad history of human ignorance, credulity and superstition.

These disfiguring blots on the fair name of medicine have been gradually disappearing whenever the light of science has been permitted to shine upon them at stated periods all along down the stream of time, and although error, bigotry and superstition have confronted science at almost every step in its onward march, the indomitable perseverance, suffering and courage of the ancient medical philosophers justly command our admiration and respect.

* Address to the graduates of the Evansville Medical College, delivered February 27, 1878.

They had none of the opportunities that are the priceless heritage of the medical profession of to-day. Dependent on rude appliances for investigation, they struggled on, persecuted and prevented by every obstacle that dogmas, secular and divine, could interpose; in some instances, even death from the faggot and stake.

They succeeded in handing down to us those great fundamental truths, which form the foundation upon which the temple of medicine has been erected,

The facilities of to-day for the study of medicine offer to the earnest student unparalleled advantages. Magnificent medical colleges, and schools of more modest pretensions, but none the less earnest in availing themselves of all the new discoveries approved by the unerring test of science, are covering the civilized world; and the man who enters upon the responsible duties of a practitioner, without a good general knowledge of the science he professes to practice, is either destitute of application or ability. Such an individual should abandon the profession of medicine and seek employment in some calling that does not demand so much ability and labor; nor should he enter so noble a profession and prostitute it solely for selfish gain. Such a man is a living fraud on the community he maltreats, a detestable parasite, drawing his sustenance from the genius and labor of others and making no adequate return; he should be held up as a fit object for professional and public scorn. That noble devotee of science, Louis Agassiz, said, "I have not time to make money," nor will you, gentlemen, have time to make fortunes if you do justice to your profession and your fellow-men.

In the grand march of the sciences, medicine of to-day is maintaining its place in the front ranks of onward progression, and through the enlightened position it occupies is enabled to make all the sciences tributary to it.

The rapid multiplication of medical books and monographs, and the demand for new editions, show the avidity with which the latest improvements and discoveries are sought for by the profession.

The great temple erected to medicine has numerous compartments, which serve as the storehouses for scientific contributions, and the various avenues leading to it are constantly thronged with scientific contributors, bearing from the fertile fields of recent investigation new and valuable facts, and by the aid of new

and improved instruments they are enabled to correct the errors of the past, and to furnish valuable additional truths to the great store already on hand. Among the instruments that are now brought into requisition and made tributary to the physician seeking to make investigations, I would mention the spectroscope. By the aid of this recently invented instrument the chemist is enabled to reach out ninety-two millions of miles and detect the vaporized metals of iodine, lithium and iron, floating around the sun. With it it is possible to detect the one hundred-millionth part of a grain of sodium floating in our air, and the most minute presence of poison in a drop of human blood. By the aid of the laryngoscope and rhinoscope the physician is enabled, through the organs of vision, to inspect the dark and hitherto impenetrable recesses of the throat and nasal cavities, and instead of having to form a conjecture of the amount of disease existing in those hidden passages, he can illuminate them and examine the extent and character of the affection with the same facility that he can examine a disease upon the hand.

Of the collateral branches tributary to medicine we have chemistry, anatomy, physiology, pathology, materia medica, therapeutics, pharmacy, ophthalmology, etc.

Medicine of to-day, in fulfilling its exalted mission of developing and diffusing scientific knowledge throughout the ranks of the profession, is well up to the high tide of scientific advancement.

One fruitful factor that has furnished much aid in approaching that degree of perfection which so commends itself to the lover of science, is the devotion of a lifetime, by men of genius and self-sacrificing industry to distinct departments and special branches, by which valuable contributions are made to our science. Most of them are men distinguished for their thoroughness in all departments of medical learning; and by carefully extended observation and a thorough acquaintance with all branches of science, they are enabled to penetrate deep into the mysteries of science, and reflect clear and even brilliant light upon hitherto obscure points and arrive at safe and correct conclusions.

Students of to-day have the advantage of the carefully collected and written investigations of men who had become thoroughly conversant with those fundamental departments of medical science, viz., anatomy, physiology, pathological anatomy

materia medica and chemistry, finding the microscope to furnish them such valuable aid in the prosecution of these studies, yield up every other pursuit and devote a half century to the assiduous cultivation of this section of medicine, become expert microscopists. By aid of this wonderful instrument they are enabled to cultivate a large field of observation by magnifying the atoms of matter which are much too small to be seen by the unassisted eye, making valuable additions to our knowledge by establishing the truth of the cell formation of all organized structures, the development of the embryo in plants and animals, and the relation between symptoms of disease and deranged organic structure in pathological anatomy. They have also established the fact that all of our infectious and contagious and many non-contagious diseases are caused by diseased germs, and that each disease has its separate and distinct germ; that each particular disease germ when propagated will reproduce its own kind, and when they find a lodgment in the human system will unerringly reproduce their own type of disease and not another.

The time allotted to this address will not permit me to mention in detail, but merely to devote a hasty glance at the many advantages derived from untiring investigation and careful study of separate departments of science, by men of gigantic intellect and thorough scientific education.

I should not feel, however, that I had discharged my duty if I failed to mention some of the many journals devoted to the dissemination of knowledge and discoveries pertaining to distinct and separate branches of science.

Chief among these may be mentioned journals of microscopy, journals of materia medica, journals of mental and nervous diseases, journals of surgery, obstetrical journals, journals of dermatology, of gynecology, of chemistry and of pharmacy.

Encyclopedia of medicine, in which may be found as many authors as there are subjects treated of, each contributor being a master in his particular department, correct theories and well sustained facts constitute the ground work of their valuable contributions.

The important and practical aids rendered by scientific specialists have been largely instrumental during the last quarter of a century in securing the rapid advancement in literature and practical achievements, that have elevated medicine to that exalted plain on which we find it to-day. With the impetus it has

received, and the persistent determination implanted in the American mind to reach the ideal, regardless of the obstacles to be overcome, affords us a rich foretaste of that brilliant progress toward complete perfection, which will mark the grand triumph of medicine during the future half century.

There is one department of science so fraught with vital interest to all classes, a department that when properly cultivated promises to yield fruits that may be utilized, not only in the interest of science, but made to accomplish much good in the great cause of humanity.

I desire now to pass from the consideration of medicine present, to the presentation of some thoughts on this branch of science, and although it may now be said to be in its infancy, is destined in the future to bestow untold blessings on mankind.

This department is found in the vast field of sanitary science. This broad domain, so much neglected in the past, is now attracting the attention and receiving the careful consideration of many of the best educated minds in the world.

This subject is one so extensive in its scope of usefulness, and so commends itself to the philanthropic heart of humanity, that the professional mind may find ample room for the exercise of all its skill, and the non-professional may become valuable co-laborers in the work of banishing disease from the land.

Sanitarians, both within and outside of the profession, whose labor of love is to bless future generations, by the adoption of such measures as will not only effectually destroy the causes of disease, but by proper sanitary legislation will prevent their return, may find ample encouragement for their future labors in this direction, by contemplating that which has been accomplished in the past.

Those persons who will take the trouble to recall scenes in their memory of forty or fifty years ago, will not fail to recollect the very large proportion of Irish emigrants, who bore upon their faces the disfiguring marks of small-pox. The statistics from that country show that in the period existing between the years 1830 and 1840, the annual mortality from small-pox was 8,500, or, that in a period of ten years 85,000 persons died in Ireland from small-pox alone.

The physicians, the law makers, and the people combined, and vaccination was made compulsory. The number who died from that disease in 1867 was 20, in 1868, 19, and in the first half of

1869, 3, showing the result to have been a virtual stamping out of small-pox in that country.

Sanitary science, wherever encouraged, has been a prolific source of securing health and happiness to the people. Referring to its beneficial effects in England, Lord Macaulay says, "the difference between the salubrity of London of the nineteenth century, and the London of the seventeenth century is far greater than the difference between London in an ordinary season, and London in the cholera; that two hundred years ago men died faster in the purest country air than they now die in the most pestilential lanes of our towns."

Sanitary reform in doing this has added years to the average length of human life, and saved the people from a vast amount of expense, disease, suffering and sorrow.

For a practical illustration of the beneficent work that may be performed by sanitary science, we have but to compare Evansville of to-day with Evansville of twenty or thirty years ago; then the town was decimated every few years with autumnal malignant fevers, now you must go outside of the improved parts of the city to find many cases of malarial fevers.

That a large majority of diseases are preventable, no longer admits of a doubt, and yet we find that the strength of American medicine has been so largely absorbed in developing science, having for its object an aim, the study of the means of cure, or the management and amelioration of disease, that the great benefits to be derived from sanitary science and legislation have been sadly neglected except in circumscribed localities.

The country generally is destitute of any organized force in this department of medicine. The State of Massachusetts has boldly taken the lead in this matter. Her State board of health is fully organized for effective work, and issues annually a large octavo book of 600 pages of transactions. Her health officers are gathering a fund of useful material of inestimable value to the present, and of particular advantage to future generations. When any form of epidemic disease makes its appearance in any part of the State, competent scientists are dispatched to the scene of suffering, and their duty is to investigate the source of disease in that locality, and prompt measures are taken to remove the cause and prevent its future repetition.

Some ten or more States have fallen into line and are industriously perfecting their plans for future usefulness.

Our sister State of Illinois has recently enacted wholesome laws for protecting her people against incompetent physicians, whether they be local practitioners or traveling dispensers of professional services. Each local physician must exhibit satisfactory evidences of qualification, and those traveling gentlemen (claiming superior ability, who may be here to-day and gone to-morrow with a pocket full of fees from patients whom they promised to cure but important business elsewhere prevented their doing so), must pay into the treasury of the State twelve hundred dollars per annum for the privilege.

Every State in the union should have an efficient State board of health, and these should be governed and assisted by a national board and judicious laws.

In the accomplishment of a work so intimately connected with the welfare of future generations, earnest aid from the people is indispensable; they should be instructed in a cause that so directly interests them; they should learn that its beneficent objects are for their good. They should be instructed "to discriminate between the steady lights of true medical science and the *ignis fatui* of quackery."

The people are eager to be instructed in any thing that pertains to a knowledge of medicine, more particularly if it be curative medicine. They will read and place implicit confidence even in the absurd advertisements that crowd the newspapers, and the numerous almanacs that flood the country in the interest of unscrupulous nostrum venders. They may frequently be heard to say, "that must be a good medicine, for that doctor in the almanac described my symptoms better than I could tell them myself."

A lady friend of mine moved into a neighborhood not far from this city, and called on one of her neighbors. Their conversation incidentally included the subject of sickness, when the visitor asked, "what doctor do you employ?" The neighbor answered, "oh, we don't have no doctor; we takes the almanac."

In view of the dangerous elements contained in many of these nostrums, it is fearful to contemplate the amount that is swallowed and applied.

Hygienic legislation should be made to protect the people against the evils of medicines so potent of immediate destruction of life, or entailing injuries that may not be recovered from in a lifetime.

That class containing narcotics, and known as soothing syrup, cordials, etc., used to depress the delicate nervous systems of childhood and infancy, and force them to sleep, implants in their young life the first step in the formation of the horrible opium habit.

Some, as the ague specifics, contain poisonous elements, as arsenic, and others destructive to tissue by continuous and indiscriminate use.

If these be evils that imperatively call for sanitary legislation to protect the lives and future health and happiness of the people, what shall we say of that interminable list of invigorating cordials and strengthening bitters, declared panaceas for every disease possible or impossible. The people take them. The people feel that they need invigorating and these promise them strength. The strengthening principle of these medicines in a large proportion is alcohol, and constitutes to-day one of the most fruitful sources of creating an army of drunkards in our country. These insidious foes to the health and morals of the community are permitted on the shelves of our druggists side by side with the medicines dispensed by physicians.

Sanitary legislation should proclaim that there must be a stop to this vile traffic, that the druggist who deals in these patent and licensed poisons shall not fill prescriptions for physicians.

And now, gentlemen of the graduating class, we have arrived at the close of a pleasant, and to you, I hope, profitable session of the Evansville Medical College. It is not the least difficult part of my task this evening to command a few appropriate parting words. I should not refer to the past winter's association in the lecture-room and the clinics, were it not that they are inseparably connected to the present by recollections in the fruitful field of remedial science.

My aim has ever been to include in my course of instruction whatever I deemed as embracing the greatest practical importance to the physician, and in referring to the pleasant intercourse during the entire session which has just closed, I find myself deeply grateful to you for your earnest devotion to and diligent application of the principles advanced in the course of study; and also for your uniform courtesy and patient kindness during our association as students and teacher.

I shall ever feel a deep interest in your welfare, and shall at

all times be pleased to hear of your professional triumphs in science and your personal and professional prosperity.

Whatever may have been suggested in this address calculated to direct your investigations toward the great work of sanitary science, you will find ample opportunities to put in practice in the various localities with which your professional labors will be identified. Your professional and social intercourse with the separate communities in which your professional lives will be cast, will enable each of you to instruct the people and enlist their co-operation in hygienic work for the improvement of the sanitary condition of each individual locality. In the broad scope of hygienic medicine you will have ample room for the exercise of philanthropic investigations, and your names may become immortalized as benefactors of the human race.

There are other important medical questions that will lay claim to much of your spare time for investigation. Until the time that sanitary medicine and measures become perfect, there will be diseases that will imperatively demand earnest and scientific research to enable you to approximately arrive at correct conclusions deduced from cause and effect in regard to disease, and the rational, this is not enough, the scientific application of remedies. Where it is possible you should never stop short of realizing the latter desideratum.

"The high responsibility and important interests to the human race, involved in the discussion and investigation of questions connected with the science of medicine, should inspire a deep earnestness, an intense desire to arrive at exact truth. This truth, when reduced to practical application, if the science of medicine should ever reach the dignity of an exact science, will be found as exact and never failing as are the rules of mathematics."

Your first step in the investigation of disease should be a careful study of the condition upon which each complaint depends; then, if possible, learn its cause; next employ the remedial measure best calculated to correct that abnormal condition. You should study medicine as philosophers, reasoning, as I have said before, from cause to effect. Never idle away your time following visionary theories and meaningless general principles. You should determine to continue your efforts until each pathological condition and cause upon which depends every symptom and physiological sign of disease, is fully demonstrated and un-

derstood. Then it will be easy for you to meet by scientific and efficient processes every well marked indication for treatment.

In conclusion, gentlemen, as time will not permit me to dwell at length on the importance of devoting your spare time to the study of the sciences, or on the manner of your deportment toward your brother physicians and your fellow-men, in order to sustain the dignity and honor of your profession, permit me to recommend for your future government a short but comprehensive maxim, the golden rule, "Do unto others as you would have them do unto you."

ARTICLE XLVI.

PASSIVE MOTION IN CASES OF FRACTURES INVOLVING THE JOINTS.

By JNO. T. HODGEN, M. D., of St. Louis.

The usefulness of a limb is so largely dependent on motion at the joints, that it becomes a matter of the first importance to preserve that motion.

The attention of the surgeon is especially directed to this point by all surgical writers, and by none is the practice of early, free and persistent passive motion more urged than by Dr. Jno. C. Warren, of Boston,* and so thoroughly does Dr. W. believe in the value of passive motion, that he recommends in cases of fracture of the condyles of the humerus, that "no splints be used," and that "the patient be accustomed to early and daily movements of flexion and extension," and adds, "the accomplishment of this process is so very painful that few patients have the courage to submit to it, and few surgeons the firmness to prosecute it," and to this absence of courage on the part of the patient and firmness on the part of the surgeon, he attributes the loss of the use of the articulation in a great many cases.

Prof. Hamilton, in speaking on this point, says: "My respect

* See Report on Surgery, by Dr. Norris, to the American Medical Association, 1848. Hamilton.

for the distinguished surgeon whose opinion I have given does not permit me to question the correctness of his practice, but I cannot avoid a belief that his language does not convey a proper idea of his views. If he intends to say that he would move the joint freely when it is suffering from acute inflammation, and when motion occasions great pain, I must protest against the practice as likely to do vastly more harm than good in any case, but if he would move the joint from the first, when the inflammation and swelling are trivial, and when it occasions only an endurable amount of pain, then his views are just and 'his practice worthy of imitation.' "

In speaking of "fracture of the inner condyle of the humerus," Prof. Hamilton says: "Within seven days, perhaps earlier, passive motion must be commenced, and perseveringly employed from day to day until the cure is accomplished."

Prof. Gross recommends that "passive motion be commenced at the end of two weeks, and repeated every forty-eight hours until all danger of ankylosis is passed."

Miller, of Edinburgh, uses the following language in reference to "fracture of the condyles of the humerus: " "But from time to time it is expedient to undo the apparatus and practice passive motion of the joint lest stiffening should occur."

In reference to "fracture of either condyle of the humerus," Erichsson holds the following views: "It is in these particular fractures that passive motion, if it ever be employed, may be had recourse to, a tendency to rigidity about the joint being otherwise often left. The motion should be begun in adults at the expiration of a month or five weeks; in children at the end of three or four weeks after the occurrence of the accident."

Bruit suggests in case of fracture of the lower end of the humerus, that the "splint may be made of perforated zinc, and provided with a male and female screw in front, and with a hinge at the elbow, so that passive motion may be applied in fractures near or into the joint."

Sir A. Cooper advises that passive motion shall be commenced at the expiration of three weeks after the accident in the child, and at a month in the adult. This practice has been followed by most English surgeons.*

Malgaigne begins to move the joint on the twentieth day.

Holm's System of Surgery.

South recommends passive motion beginning about a fortnight after the accident.

The object in citing the above authorities is to show that passive motion is generally recommended by surgeons in the treatment of fractures near the elbow-joint. These authorities clearly state that the object to be accomplished in the use of passive motion is the prevention of ankylosis, and many of them recommend that motion begin at a very early period.

I am aware that a servile submission to the authority of great names would suggest a quiet acceptance of the above teachings, and that I would displease no one if I remained silent on this subject. I also believe that a modest expression of ones opinion cannot be offensive, and may be profitable.

The stiffness of joints in cases of fractures, near to or involving those joints, is due to two causes. 1st. The nutritive changes that occur in all the parts involved, *i. e.*, bones, cartilages, ligaments, tendons, muscles, connective tissues, vessels and nerves, —from the suspension of function. Thus, in all joints left during the several weeks required for the union of fractures, there remains a degree of stiffness, and this stiffness is most easily overcome in those tissues in which nutritive changes are most rapid. Passive motion would preserve the normal condition of all those structures whose fractures are passive, as bones, ligaments, cartilages, synovial membranes and tendons, but passive motion will not substitute the active function of blood-vessels, muscles and nerves; in other words, the exercise of the special function of any tissue is essential to the maintenance of its normal structure. It is a good general rule, that the joints contiguous to a fracture shall be immobilized, and this should be done though it is known that it will often result in temporary impairment of function, because the immobilization of a fracture is important to proper union. Hence, we do not hesitate in the pursuit of a course that is sure to result in temporary impairment of the function of joints, and accept the probability of restoring the structure and function of the joint after the fracture is secure.

The second cause of loss of motion is inflammation—the products of which blend parts designed to be free. Thus in Colles' fracture nothing is more frequent than to find the fingers stiff after the repair of the fracture—stiff from the blending of the

extensor tendons with the sheath as they lie in the grooves in the dorsal surface of the radius.

And it is also frequently found that the elbow is stiff after fracture involving that joint, and especially so if inflammation run high and the inflammatory products be abundant. Our attention then should be early directed to the prevention of inflammation if we wish to avoid ankylosis. If we prevent inflammation we prevent stiffness resulting from the second cause noted, and this is the only character of stiffness that need disturb the surgeon, as that arising from simple suspension of function will be overcome without difficulty. Allow me to ask a question, the answer to which is of more importance than any other in regard to the management of inflammation. What is the most efficient antiplogistic? What means will best prevent and subdue inflammation? I think no one can be found who will not admit that *rest* is worth more than all other means in preventing and curing inflammation—general rest, and local rest, absolute rest.

In pneumonia, in pleuritis, in peritonitis, cerebritis-synovitis, in all inflammations, *rest*.

I have a friend who in reply to the question as to how he had treated peritonitis, said: "I put the peritoneum in an opium splint."

Surgeons have advised in case of fractures involving the elbow, to leave the part exposed so that applications can be made to subdue inflammation. How comparatively worthless are evaporating lotions in any inflammation? Do they do more good than the disturbance of the joint necessary to their application does harm?

Another valuable means of preventing inflammation is found in keeping the blood in excess from entering the part.

Yes, we elevate the part that we may have the aid of gravity. We use atropia, ergot, etc., to contract the blood-vessels and thus prevent an excess of blood from reaching the injured or inflamed part. The ligation of arteries has been practiced for the relief of inflammation.

Is it possible to regulate the quantity of blood going to a part by uniform pressure? It certainly is possible, and no better means can be employed in preventing ankylosis of the elbow in case of a fracture involving the joint, than by encasing it in a carefully applied splint of plaster of Paris, and thus at one

and the same time, and by one and the same means, secure perfect rest and limit the amount of blood going to the injured part. If this is done before extravasation has occurred, it will limit the amount of blood poured out, and if done before inflammatory swelling it will prevent the inflammatory exudation, and there need be no fear of stiffness if there is no inflammatory exudation.

When called to a recent fracture involving any joint there is no more certain means of preventing ankylosis than by applying a plaster of Paris splint to the part and allowing it to extend sufficiently beyond the site of fracture to secure perfect rest. The bandage should be made in the usual way, *i. e.*, recently heated, finely powdered plaster should be rubbed into the meshes of strips of cheese cloth and then loosely rolled. These should be placed in tepid water until wetted. The fragments adjusted as nearly as possible, the limb placed in proper position, the prominent bony points covered by cotton wool, and then the rollers should be lightly applied—never so as in the least to impair the circulation at the moment of application.

Applied in this way every part of the surface is equally in contact with the splint and equally supported by it. The limb should be elevated to aid venous return, and the patient carefully observed during the first 24 hours. The distal part of the limb should be left uncovered by the dressings, that their condition may indicate the least disturbance of venous return. Generally it will be found that the dressing is not only borne without suffering but gives a sense of comfort. Occasionally it happens that swelling in the distal parts occur, and it is necessary to cut the bandage; if so it need not be entirely removed, but the limb may be left in its well fitting bed unless the swelling occurs to such an extent as to make the pressure unequal.

If in any case the first dressing can be allowed to remain, we have the best possible condition for preserving the motion of the joint. On the other hand, if passive motion is made while the increased sensibility indicates a degree of exalted nervous sensibility, it is much more likely that passive motion will increase than diminish exudation, and thus increase rather than diminish the probabilities of ankylosis.

After the union has been accomplished at the site of fracture, and the increased vascularity has subsided, and ankylosis remains from the presence of inflammatory adhesions, then motion

will accomplish here what stimulating applications do for opacities of the cornea; enlarge the blood-vessels, increase the blood flow, and hasten the removal of inflammatory products.

CONCLUSION.

1st. The stiffness of joints resulting from suspended function, if persistent, should be treated by passive motion.

2nd. During the existence of inflammation from a fracture involving a joint, passive motion can only result in harm.

3rd. Passive motion after the union of fractures involving a joint and after the subsidence of inflammation will aid in the restoration of function.

4th. The time that passive motion should begin, cannot be named in weeks or months, but should be determined alone by the condition of the part.

5th. Perfect rest and equable pressure are the best means of preventing ankylosis resulting from inflammation in case of fractures involving joints.

I will add that I began the use of plaster of Paris dressings in 1862 and have continued to use them to the present time, in cases involving the knee, ankle and elbow-joints, and with the purpose of preventing motion and securing uniform pressure, and think I have never had a case injured by such dressing.

I will further add that I have not made passive motion in any case of fracture involving a joint, until the union of the fracture was firm and the inflammation had subsided. In the earlier part of my practice I expended a good deal of time in trying to devise a good elbow-splint that would admit the passive motion, but never succeeded in applying a hinged splint so that the center of motion in the splint and limb corresponded so exactly as to permit motion at the joint without a degree of disturbance at the site of fracture if near the joint. To-day I believe it fortunate for my patients that I did not succeed, for the reason that I believe that motion, *during the treatment of a fracture*, insures rather than prevents ankylosis from inflammatory deposit.

ARTICLE XLVII.

HEMORRHAGIC MALARIAL FEVER AND ITS TREATMENT WITH IRON AND ALUM MASS. By WILLIAM A. GREENE, M. D., of Macon, Georgia.

About the year 1868 there suddenly occurred in the low lands bordering on the Alabama river and few other localities of the West an unusual disease, which, at the time, excited intense interest and concern among the physicians, because of its great fatality and refusal to yield to any of the ordinary modes of treatment.

Dr. Richard Michell, of Montgomery, Ala., gave us the first intelligent account of the disease, which I read with great interest and benefit. Within a few years it made its appearance in nearly all the States of the "cotton belt." It assumed various names, and its cause, pathology and treatment were the subjects of much controversy among physicians. About the year 1870 I furnished a paper to the *Richmond and Louisville Medical Journal*, giving my views on the subject based on quite a limited experience. Since then it has been my lot to see a large number of cases. In all the diversity of opinion concerning the disease and its treatment, there has been but one opinion as to the essential use of quinine and some of the preparations of iron. The entire list of ferruginous medicines has been tried, each form having its advocates, but no one bearing the severe test of protracted experience.

Last summer and fall was noted for the unusual number of persons affected by and the severity of this disease in the vicinity of Macon, and in fact throughout Southwest Georgia. I had under treatment at one time as many as sixteen or eighteen cases of a severe type. About twelve months since I called the attention of the profession to the use and value of what is known as the Iron and Alum Mass in the treatment of various diseases, especially of our climate. This article was published in the *Southern Medical Record*, of Atlanta, Ga. I had previously determined to give it a trial in this season when opportunity offered, since in my opinion it possessed the properties in the

most desirable combination best suited to what I considered the indications of treatment, namely: tonic, alterative, diuretic, stypic and anti-periodic.

The analysis of the Iron and Alum Mass, as given by J. M. Mellett, M. D., Prof. of Chemistry in the University of Virginia, is too well-known to all journal readers to be repeated here.

And further, there has been so much written and published concerning this disease under consideration, that it would be superfluous to say anything further in that direction. Physicians are now well acquainted with its causes and pathology, but its treatment is a subject which requires our further thought and consideration.

The therapeutical effects of the prominent ingredients of this remedy, alum, iron, potassium, magnesium, calcium, etc., are so familiar to all physicians, that with a proper conception of the pathology of "Hæmorrhagic Malarial Fever," will at once suggest its applicability as a remedy. After an experience of its use in over thirty cases, I am convinced we have no remedy equal to it. I do not say it is to be *depended on alone*, but as the *principal* remedy. Its *cheapness* puts it in the reach of all classes, for the poor people are the ones who suffer principally from the disease, and it can be used without the advice of a physician, if it should be necessary. Within my own knowledge I can cite quite a number who were treated simply by the iron mass, after the use of the usual cathartics and interruption of the paroxysms by quinine; and when the cases were not severe, the anti-periodic properties of the Mass was sufficient. I will illustrate my use of the medicine and treatment by giving a few cases, the notes of which I have carefully preserved.

I will premise with a few remarks both to shorten the history of the cases and to make myself more intelligible. The cases under my charge were usually remittents or quotidian intermittents, having in every instance been the subjects of chronic chills and fever for a longer or shorter length of time. Remittents much more frequently come under treatment. The cases were ushered in with a chill more or less decided, which lasted a variable period. In the febrile stage the pulse was full, quick, frequent but soft, and sometimes dierotic; skin hot, dry and rapidly becoming yellow or bronzed; tongue heavily fevered in the center, sometimes red and dry on the tip and edges; intense

cephalgia always present; aching in the back and limbs; suffusion of the eyes; vomiting of food and intense nausea; delirium frequent during exacerbations. The remissions are characterized by great prostration and most painful aching of the limbs; skin moist, but never by profuse sweating; bowels usually constipated, occasionally watery looseness, dejections brown or black and offensive, urine scanty, depositing abundant calcareous sediment, and rapidly assuming a deep pokeberry juice color of a bloody character. The chill is not regular in duration, and the febrile reaction extremely gradual in its approach. In some instances I have noticed the two stages coincident, and during the highest excitement a sense of chilliness observed, and persistent rigors. The most painful as well as constant symptoms were the aching of the back and extremities, with indescribable and death-like nausea. Having suffered an attack *in propria persona*, I can testify to a "feeling remembrance" of the acuteness of these enumerated symptoms. If the disease is not promptly arrested or modified all these symptoms are aggravated and intensified, resulting in coma, convulsions and death.

A significant and never-failing feature of this disease is that all that I have ever seen attacked had been previously the subjects of intermittents or other malarial trouble, and it is quite unusual for full-blooded negroes to be afflicted, this being especially noticeable when the disease first made its appearance in this section of country.

CASE I.—Aug. 9th, 8 P. M., called to see J. B.; age 40, weight 170 pounds; sanguine temperament; well developed; has been in Macon, Ga., two years; native of New York; never sick until early spring, since which time been suffering with chills and fever; yesterday had severe chill followed by light fever; this morning skin very yellow and urine of a bloody character. The chill returned this evening with usual symptoms of pains and nausea, with well marked characteristics of hæmorrhagic malarial fever. I directed four comp. cath. pills at once; they acted by 4 A. M. following morning, when 20 grs. quinine was administered, followed in four hours by 10 grs. more.

Aug. 10th.—Saw him about noon; skin bronze color; urine scanty, thick and dark bloody color; the chill did not return; fully "quininized;" nausea intense; ordered Iron and Alum Mass, 40 grs. every six hours, dissolved in water, with cream

and brandy, much as could be given him, in teaspoonful doses.

Aug. 11th.—Saw patient 3 p. m.; had taken over 200 grs. of the iron mass; was much more comfortable; skin very yellow, but soft and moist; tongue cleaning; urine more abundant, but color of pokeberry juice; not so thick; continued Iron Mass, 30 grs. every six hours, and 15 grs. Dov. pulv. at bed-time if sleepless.

Aug. 12.—Skin "cleaning up" at 4 p. m.; urine decidedly improved; pulse 86; rested well all night; bowels acted twice this morning; continued Mass 20 grs. every six hours, with full nourishment.

Aug. 13.—Dismissed patient with instructions to continue Iron and Alum Mass in doses of 40 grs. three times daily until well.

Aug. 16.—Called at my office in his buggy; in a perfect state of convalescence; ordered him to continue the mass in 20 gr. doses three times a day for two weeks. He returned to his home in New York in a short time, and wrote me he had entirely recovered, continuing the medicine for thirty days.

CASE II.—Sept. 29, 7 p. m., called to see A. W. C.; age 22; weight 140 pounds; native of Ohio; sanguine nervous temperament; says he was taken sick four days before with pains in all his bones, and had a chill every day since, commencing at 12 m.; had a severer chill than usual a few minutes after 12 m. this day; he took a blue pill and castor oil night before last, which operated finely,

Sept. 30th, 7 p. m.—Has fever and complains of usual pains; great nausea; tongue heavily fevered; papillæ enlarged and of a bright red color; tenderness over epigastrium; respiration 32; full thoracic; temperature under tongue 103°; skin very yellow; urine bloody color; having been purged freely no other medicine given during the day. I determined to dispense with the usual quinine medication and test the virtue and efficacy of the Iron and Alum Mass *ab initio*; therefore ordered 60 grs. to be given at once and repeated every four hours until three doses were taken, and 40 grains at same intervals, until I called again. I also directed bromid. potass. ʒ j; sulph. morphia grs. ʒi; water ʒ j. Mix. One tablespoonful well diluted often as required to procure sleep or relieve pain.

Oct. 1st., 1 p. m.—Bowels acted freely; says he feels

much better; tongue presents same appearance; skin cool and relaxed, but *very* yellow; not so much flushed. Temperature under tongue, 99.5° ; pulse, 70. Urine more copious, and much improved in quality; reaction of urine decidedly acid, which I find characteristic in this fever, and the acidity in proportion to the *severity* of the attack. Specific gravity of urine passed from 11 o'clock p. m., last night, up to 1 o'clock p. m., this day, 1008. Up to this time (1 p. m) has taken only the Iron and Alum Mass, with three table-spoonsful of the brom. potass., mix., and its action, I think, may be connected with the diminution of all the severe symptoms, especially improvement in the *urine*. (I have noted a careful chemical examination of the urine which I wish I had time and space to give.) Continued the Iron and Alum Mass. 40 grs. every six hours, and anodyne mixture *pro re nata*.

Oct. 2nd.—Says he feels much better. Slept well during the night; tongue moist and cleaning; skin soft and much clearer; urine deep orange color, with slight deposit, due, I think, to the precipitation of the alkaline and earthy phosphates, in combination with the ammonia, generated during the decomposition of the urea. No further movement of bowels. I ordered: Calomel, grs. iv, sugar, grs. xx, pulv. ipecac., gr. i. Mix well and make one powder. Give at bed time. Continued the Iron and Alum Mass. in reduced doses, 30 grs. every six hours.

Oct. 3rd., 11 A. M.—Says he feels much better, and has “no pain except slight soreness in his bones.” Tongue clean, moist—a shade redder than normal; papillæ still enlarged, red and distinct. No pain or pressure of epigastrium. No return of fever. Temperature under tongue, 98.5° ; pulse, 75; respiration, 18. Color of urine lighter, and few hours after being boiled, let fall a copious light yellow deposit of triple phosphate and urate of soda. Twenty hours after it was boiled, its reaction was decidedly alkaline. Skin almost natural color. Ordered: Official infusion of Virginia snake-root, oz. viii, sulph. quinine, grs. xv. Mix. Table-spoonful every three hours. At the same time gave 20 grs. of the Iron and Alum Mass. Diet, mutton soup and boiled rice. I gave the quinine in this instance, not because I really thought the patient needed any thing more than the Mass, but to make assurance doubly sure in hastening the recovery, as his time was so valuable, being a drummer, and belonging to the pharmaceutical profession, and who had suffered a similar attack a few

months previous in New Orleans at the Charity Hospital; besides he did not seem satisfied unless he had *some quinine*.

Oct. 4th. 11 A. M.—Much better. No return of chill or fever; bowels twice open. Temperature under tongue, 96°; pulse, 70; respiration, 16. Skin almost natural; urine normal in quantity and nearly so in quality; and ordered nothing but the Iron and Alum Mass, *about* 30 grains, three times a day, in pill.

Oct. 5.—Dismissed with a bottle of the Mass in his satchel and to continue taking it until he got out of the malarial belt.

CASE III.—Aug. 27, 1877, W. B. G. entered my office with a quotidian; had been suffering for many months with chills and fever. He nor I noticed anything unusual at the time in this paroxysm. I cautioned him concerning the importance of curing these frequent attacks, because of the prevalence of what the people in this section call *yellow fever* (hæmorrhagic malarial), raging in his vicinity. On his way home (leaving my office after the fever had begun to subside), one mile from the city, he walked through a field to shoot some birds, and happened to *urinate*, some of it falling in a piece of corn-stock, and attracted his attention, being "very black," as he described it. The sun was nearly down and he hastened home, much frightened and quite exhausted. His wife at once noticed how *yellow* was his skin. He called for a vessel to make more urine for examination, which he *forced*, but found *characteristic* of the fearful and dreaded fever. I was at once called in, arriving about 11 o'clock P. M. I approved his diagnosis. He was badly scared, since nearly all had died under the treatment which had been used. I promised to cure him if he would follow directions *strictly*. At once gave him calomel, grs. xii. sul. quinine, grs. xv. one dose; also, pepsin, grs. xx. mur. morph., grs. i; divided in two powders, one to be administered in sherry wine, repeated in two or three hours if needed, to relieve sick stomach or produce sleep. One was sufficient.

Aug. 28th, 9 A. M.—Medicine had acted well on bowels. Pulse, 104; respiration, 24; labored and thoracic; tenderness exquisite on pressure over epigastrium; tongue was deeply furred, normal in color and moist. Skin *very* yellow over the *entire periphery*, and urine of a "bloody color," thick and scanty. Ordered quinine, grs. xxx: in ten grain doses, repeated every

three hours; also lactopeptine for nausea, and chloral hydral, for sleep, in usual doses.

Aug. 29., 12 M.—Had no return of paroxysmal fever; much better. Ordered Iron and Alum Mass in full doses, as preceding cases, with full nourishment.

Aug. 30th.—Improvement satisfactory. Continued the Iron and Alum Mass. Dismissed patient at the end of one week, but ordered him to continue the Mass for three weeks. Recovery was complete.

These cases are sufficient to indicate my mode of treatment with this remedy. The type of the disease was either much milder than I had been accustomed to, or the remedy far more efficacious. I shall note its further employment with great interest. It will be noticed I do not depend on it alone, but use calomel in some combination as a cathartic, and quinine to control the paroxysms. Yet I have in some mild cases had success equally as satisfactory when no quinine was employed. Several cases have come to knowledge that were treated without a physician, simply with the Iron and Alum Mass, and cathartics.

I advise the remedy in *full, large* doses, putting the patient fully under its influence as rapidly as possible, and when this has been done early in the disease, I found far less pain in head and limbs, and less nausea; in fact the attack rendered less severe in all respects. From my present experience I would place reliance chiefly on this medicine, employing such others as might be indicated in the course of the disease. It was not my intention to speak further of this new medicine, than in the treatment of the disease under consideration, having less than twelve months ago contributed a paper in which I specially mentioned it. But all *new* remedies are looked on with suspicion until long use has demonstrated their reliability and value. I am glad this is true, otherwise we would be continually "on the run" after the thousands of new preparations which are daily brought to our attention through circulars, "sample packages," and "drummers."

I hope that those who practice in regions where *haemorrhagic malarial* fever prevails will be induced to give the Iron and Alum Mass a fair trial and report their experience in the medical journals.

ARTICLE XLVIII.

DISEASES OF THE GENITO-URINARY ORGANS, WITH FURTHER EXPERIENCES IN OF THE USE THE NEW DRUG DAMIANA (*Turnera Aphrodisiaca*). By JOHN J. CALDWELL, M. D., of Baltimore, Maryland.

Says the learned Gross, "Reduced sexual power, from whatever cause it may arise, is one of the most distressing of maladies, and is therefore entitled to the deepest sympathy and consideration on the part of the honest practitioner, by whom unfortunately it is rarely discussed."

Dr. Gross also says from the intimate connection which exists between the urethra, the prostate gland, the seminal vesicles, ejaculatory and the differential ducts, and the tubes, it is not surprising that lesions of that passage should exert a powerful effect upon the functions of generation, whether that effect be due to the extension of morbid action through continuity of structure, or to reflex action. Hence it is that many persons affected with urethral disorders suffer from more or less marked disturbance in their sexual power, amounting in some instances to impotence, or inability to copulate, either from inability of introcession or premature ejaculation, both states being associated with imperfect or transient erections. In many cases dependent upon stricture, inflammation, hyperaesthesia of the posterior portion of the urethra.

CASE I.—T. W., a young gentleman of wealth and somewhat "roué," called at my office Sept. 25th, the very picture of health; aged about 30; complains of a failure in his effort at copulation, owing to a partial loss of erectile effort. On examination I found the history of excessive venery only. The sound exploration failed to discover either stricture or tenderness of the urethral tract. All other functions being normal. I advised him simple rest for a couple of weeks. After due trial he returned reporting treatment so far a failure. I then placed him upon the fluid extract damiana, tablespoonful doses, well diluted, to be taken morning and evening, together with a generous diet, and a respite from all genital exercise. After ten days of such treatment he reported himself fully re-habilitated and fully potent.

CASE II, Sept. 2nd.—A gentleman of middle life, aged in the fifties, Mr. D., calls concerning an indescribable pain or sensation about the head, with a loss of power and desire for sexual connection; attributed it to great and continued trouble in his business relations. On examination I failed to find any lesions of the genito-urinary organs or functional disturbance of his alimentary canal. Indeed he seemed in all respects a fair specimen of health, with the two exceptions named. I ordered him free use of *Damiana*, and occasionally when the pain in the head was severe, application of the constant current of electricity to the nape of his neck, down the spinal column. His treatment was continued several weeks with very fair results, though his business troubles were still on his mind.

CASE III.—W. E. J., aged 24, called Dec. 10th, apparently in good health, but complaining of inability to perform the sexual act. I failed to discover any lesion of the urethral tract, or any other trouble about his person, except that his verile organ was small and flabby. He reports good erections when abed and alone, but utter failure of this effort when in company with a female about to copulate. I deemed this a case of genital demoralization, and placed him under the most advanced treatment for the same, with electricity, rest, moral suasion, cold baths, etc., and the very best fluid extract *Damiana*, fully as to quality and time, but all in vain.

CASE IV.—R. J., aged 54, called Aug. 2nd, complaining of a gradual loss of health, weight, and genital power. Here, too, we failed to discover any lesions of the genital organs. His seemed to be a case of general atrophy from debilitated digestion and assimilation of several years standing, which yielded kindly to local and general Faradization, after a few months' treatment. But his genital organs were still weak and impotent; thereupon we placed him on liberal doses fluid extract of *Damiana*, which acted like a charm after a few weeks' administration. The first effects were to cause two full mushy stools per day, accompanied by an increasing appetite, and finally a restoration of his lost sexual power.

CASE V.—Mr. J. H., aged 25, called Jan. 2nd, suffering loss of copulative power. Upon an examination of the urethral tract, the sound was arrested by two structures at the prostatic portion

of the urethra. The neck of the bladder was found irritable with excessive mucal discharge. The strictures were gradually dilated by the appropriate instruments for that use. The bladder washed daily with a double silver catheter, using as a wash a weak solution of atropine. Internally administered gelsemium with the bromide of sodium. This was continued until the acute symptoms had subsided, when Damiana was administered. The sound passed daily, through which a constant current of electricity was passed from the sacrum to the end of the sound. In all this treatment lasted about one year. Since then the young gentleman has married and finds himself fully able to do family duty.

SPERMATORRHOEA.

Says Tanner, spermatorrhœa is a deranged state of mental and bodily health, due to too frequent escape of seminal fluid. Masturbation is the most common cause.

SYMPTOMS.—There may be only a separate escape of seminal fluid; or this may be associated with morbid changes in the vesicular seminales, ejaculatory ducts, bulbous portion of urethra, and prostate gland. Urine sometimes rendered slightly albuminous by seminal fluid.

CASE I.—S. T., of N. C., aged 45 years, called June 12th, suffering from frequent loss of the seminal fluid, due, as he said, to grief and sad reverses of fortune. The penis was small and flabby. Otherwise there was no lesion that could be found. His symptoms were as follows: General debility, with some emaciation. Also much nervous irritability. Complained of dullness of vision and of poor memory. Bowels constipated and flatulent, with occasional attacks of giddiness, head-ache, and palpitation. In his case I suspected excessive venery, as he informed me that he had lately been in the habit of keeping a mistress who was greatly amative.

The treatment of his case was rest, a change of scene, nourishing diet, as the hygienic measures. Medically, large doses of the fluid Damiana, which was continued through the months of June and July, with the best of results, for his seminal losses ceased, he grew fleshy in body and better contented mentally.

A few weeks subsequently he came to the city for the treatment of general rheumatic and neuralgic pains, which yielded kindly to quinine and electricity. He had been visiting a mala-

rial district. His old trouble (spermatorrhœa) had entirely disappeared.

The characteristics of *Damiana*, viz., (Alterative effects on the alimentary canal, and the tonic effects upon the urino-genital organs,) were decidedly manifested in his experience with this drug. It will be well at this juncture to call the attention of the profession to the remarkable and beneficial action of this new drug (*Damiana*) in the various unhealthy or irregular discharges of the genito-urino organs, in the female as well as the male. Several of my medical brethren have strongly testified in its favor in the treatment of sterility, where the uterus and its appendages seemed to suffer simply from inertia. I have found it an excellent remedy in cases of amenorrhœa, dysmenorrhœa and leucorrhœa.

CASE II.—Mrs. B., aged 28, called April 6th, suffering from amenorrhœa. Had been married several years without issue; as a consequence was unhappy and anxious. Complained of excessive leucorrhœa, though apparently she was robust and healthy. Cheeks rosy, still she complained of nervous irritability, and had a dreamy and absent kind of manner.

HYGIENIC TREATMENT.—Moderate mental and bodily work, cheerful society, to avoid heavy meals, to sleep on a hard mattress and alone during treatment.

Medically ordered the use of fluid extract of *Damiana*, tea-spoonful doses, in milk, three or four times a day; to omit tea and coffee and other stimulants; to drink freely of milk or buttermilk. After pursuing this treatment two months all her symptoms improved, became perfectly regular in her menses, became pregnant at fourth month, and was delivered at the end of regular time of a healthy boy.

CASE III.—Mr. D. H., aged 24, called Jan. 7th, suffering from spermatorrhœa. He complained of loss of seminal fluid, night and day, and particularly after he had passed his water or feces. He attributed it solely to masturbation, and from his general appearance I judged he was correct. He, too, suffered from general weakness, nervous irritability, with a dreamy absent kind of manner. Flatulence and constipation. Dullness of sight, and perhaps of hearing, weakness of memory, attacks of palpitation, giddiness, headache, and neuralgia. He would keep his

bed a week or two at a time, and frequently go days without eating or speaking a word to anyone. This condition had existed for a year or more, when his father, fearful that the young man was about to lose his mind (judging from his eccentricities, and from many odd and unusual ways), called my attention to his case, when I obtained the above history.

HYGIENIC TREATMENT.—I placed him under the best hygienic influences, and required him to make daily calls at my office, when I used moral suasion and encouragement, endeavored to instill better ideas, more manly thoughts and actions, to imbue him with brighter hopes for the future; also instructed his family to put themselves to greater efforts to make home attractive, cheerful and pleasant to him. (Happy home influences surrounding youth, is a matter worthy of our most earnest solicitude, attention and study, and were it more generally inculcated throughout our land, how many young and gallant wrecks might be saved upon the ocean of every day life.)

Medically I relied upon our old and tried friend, the different preparations of *Daniana*, with entire success. Though in his case it required better than a year of skillful management to complete the restoration mentally and physically.

As to the combination with milk I may casually say that all the preparations containing gum and rosin solutions, are more agreeably taken, and more readily assimilated, when held in suspension in milk. I also would note that I have found all the bromide salts to be more ready of use and to give better results when held in solution in milk.

CHRONIC PROSTATIC DISCHARGE.

CASE IV.—Mr. K., aged 26, called on Feb. 2nd, suffering from chronic prostatitis and continued loss of prostatic fluid, dripping away from the head of his penis upon his underwear. History of the case was that this trouble originated from a long neglected gonorrhea, and frequent exposures to cold and unhealthy locations. His symptoms were pain and tenderness about the perineum, with a sense of heat and frequent efforts at passing water. He had pain on defecation; feeling of weight about the perineum and rectum; experienced pain when passing the catheter.

TREATMENT.—Perfect rest in bed; warm baths; used belladonna to perineum; bromide in solution of milk as injections per

rectum; simple nourishment without stimulus; all this until the acute stage had passed. Then I placed him upon Damiana as an alterative and tonic, which treatment was maintained for several months, or indeed until all his unhappy symptoms had disappeared.

In conclusion I will state that these are but a few of the typical cases of chronic urino-genital diseases that have come under my observation during the past year or more, where I have given this new remedy, Damiana (*Turnera Aphrodisiaca*), a full and fair trial, with results more satisfactory than any other course that I have tried or had knowledge of in an extended experience in these troubles, and I would most cordially solicit my medical brethren to give it (the genuine article), fully and freely in such cases as are named above, and report their experience for the benefit of the profession at large.

ARTICLE XLIX.

THE PRESENT STATUS OF THE PATHOLOGY OF PHTHISIS PULMONALIS.—By J. HILGARD TYNDALE, M. D., of New York City.

INTERSTITIAL PNEUMONIA.

The healthy lung contains but little connective tissue, which together with numerous elastic fibres contributes to the formation of the lung cells. This connective tissue also serves to connect the different lobules with each other, as well as to accompany the walls of vessels and of the bronchi. In a comparatively large number of cases of lung trouble, we find in the place of these traces of connective tissue, extensive sections of the lung converted into a tough, knotty, fibrous tissue. This is the result of chronic interstitial pneumonia. Whether or not interstitial pneumonia ever occurs as a primary disease, is a mooted question. This would at first glance seem strange, but the fact is, that here we are dealing with a question of *time*. It is difficult, nay, almost impossible, to ascertain the original condition of lung trouble in a patient afflicted with the chronic interstitial

form. But when you consider that there exists such a thing as an intensely acute interlobule pneumonia, it is not difficult to imagine cases primarily running a subacute course. Imagination is not proof. Niemeyer, Nothnagel and others state that it "rarely ever occurs as an independent disease," and further that this was only the case, where the long-continued inhalation of coal dust and iron particles was the exciting factor. Even then, it is said, the cirrhotic condition is not primary, but the result of bronchitis.

Our subject is to be considered under two heads: 1st., as an acute process, running a rapid course, and leading to the formation of pus; 2nd., as the chronic proliferation and contraction of connective tissue, the result of a variety of processes.

It will doubtless astonish some to learn that there exists such a thing as a separate, an anatomically well defined acute inflammation of connective tissue of the lung. If there is anything found in regard to it in medical literature, it is only hinted at as a possibility; this is owing to the well-nigh impossibility of clinically distinguishing it from other inflammations. In other words, a differential diagnosis is rendered impracticable by the sameness of the symptoms. The chill, the fever, the râles and the locality of the process are not pathognomonic; nay, not even the sputa would necessarily settle the question. Still a close study of the history of a case, which might be luckily seen in its inception, the inflammatory character of the temperature, and above all the subsequent course, differing in regard to time, from that of croupous pneumonia, ought to elevate *acute* interstitial pneumonia to the dignity of an independent and separate picture of disease.

From the sparse material on this subject we gather that this form of lung trouble occurs only as a consecutive one, by absorption of septic material. Its existence presupposes a center for pyæmic infection. This center may be only a cheesy mass. We do not know what are the immediate changes, which would cause a cheesy mass to undergo suppuration. We do know that such changes are most likely to occur in broken down constitutions (alcoholism), when the absorbed purulent matter would rapidly follow the course of lymphatic vessels, which spread out in the interlobular and subpleural tissue. Again the original cheesy center may escape detection by its small size, though I am satisfied that its absorption is never total. But if on the one hand the

original center is not always demonstrable, and on the other, the likelihood that a phlegmonous inflammation may as readily exist primarily in the lung, as any other tissue, the question may be looked upon as an open one.

The chief anatomical characteristics of suppurative interstitial pneumonia are: Turbid, dirty yellowish swelling of the connective tissue forming the support for the lung, infiltration of pus, that is, copious exit of white blood-corpuscles or hindered progress of lymph-corpuscles and rapid breaking down of the same. I beg that it should be remembered that this process takes place in the interstices of the lung-lobules themselves, and not in the bronchial walls.

This disease occurs most frequently in newly-born children, whose pyæmic infection is then traceable to the puerperal infection of the mother. It may, however, also occur in adult life in case of death by pyæmia. Indeed, we may say that all pyæmic infections involving the pleura and the adjacent connective tissue of the parenchyma, which are not caused by an embolic infarct, are *lymphatic interstitial pneumonia*. Or to state it still more clearly: The embolus plays its part in the pulmonary artery and its branches, spread out upon the lung tissue proper, and the results consequent upon its presence are seen in the same tissue. The pyæmic infection is carried on *by the blood-vessels*. Infection from a cheesy center (oftenest a lymphatic gland) is carried on *by the lymphatics*, which play their part in the tissue to which they are distributed, in one case the connective tissue support of the lung. Hence, I repeat that both for fact and simplicity, this process should properly be denominated *lymphatic interstitial pneumonia*.

The termination is probably always in death by suppuration and its consequences, which, as is known, is the most likely cause in loose connective tissue (phlegmonous processes).

In passing to the second form of interstitial pneumonia; chronic proliferation and contraction of connective tissue, we at once find ourselves face to face with decidedly different views of different authors. But one theory is supported by a single authority (Buhl), while all others (Rindfleisch, Ruchle, Stokes, Virchow, etc.), substantially agree. Buhl's position may be stated in a few words. The following is his claim, verbatim: "The name of chronic interstitial pneumonia signifies nothing else but the termination of genuine desquamative pneumonia."

Having disposed of chronic fatty degeneration as one termination, he makes chronic interstitial pneumonia another, by the following reasoning: In consecutive desquamative pneumonia we have parenchymatous oedema, due to serous transudation only; in genuine desquamative a more plastic exudation, characterized by proliferation of alveolar epithelium and connective tissue corpuscles. Where genuine desquamative pneumonia terminates in the cirrhotic condition, proliferation of connective tissue cells predominates over the more superficial epithelial changes. The beginning of this proliferation takes place in the acute stage, by the formation of spindle-shaped and stellated cells (see last article), the first indication of embryonic hyperplasia of connective tissue. Cirrhosis of the lung proper, however, can only be spoken of when connective tissue proliferation is enormous and appears as a fibrous cicatrix, in which the alveolar parenchyma and the finest bronchi are enclosed, obliterated and have disappeared.

In order to simplify the question, I will add that except by a few personal adherents, Buhl's proposition has been abandoned. Other authorities, including such pathological histologists as Colberg, Rindfleisch, and Nothnagel teach that chronic interstitial pneumonia is a termination of all forms of lung inflammations. At the same time the existence of desquamative pneumonia is denied, of which Rindfleisch recently said, that no one had ever diagnosticated a case but Buhl himself.

The objections to Buhl's desquamative pneumonia may be summed up thus: Other observers have found and described in detail the same pathological changes, speaking of desquamation of epithelium of the alveoli. But they hold that this process is part of every acute lung or bronchial trouble, and not one which occurs as an independent disease.

In chronic interstitial pneumonia the inter-alveolar and interlobular connective tissue becomes the seat of inflammatory, nutritive changes, consisting of hyperplasia of the connective tissue, thereby causing an increase of the supporting structure at the expense of the tissues containing air. In the further progress of its proliferation the newly-formed connective tissue undergoes the same changes as the connective tissue formed by inflammatory hyperplasia. At first soft and vascular, it gradually undergoes a process of *contraction*, converting it into

a hard, bloodless tissue, occupying far less space than did the healthy parenchyma.

One section of the lung is found to be of one-half to one-third of its original normal size. It is firm, even to the consistency of cartilage, devoid of blood-vessels and anemic. Instead of the white color of connective tissue, we have a gray, slate color, due to pigmentation, for which the lung seems to have a predisposition, and more especially so in chronic interstitial pneumonia. Rindfleisch calls this, "slate colored induration."

In the midst of this hardened tissue and throughout various parts of it we find dilated bronchi and sacculated caverns, the latter an exaggerated dilatation. Excessive pigmentation is also characteristic of desquamative pneumonia, and hence Buhl dwells upon this as one of his reasons for making cirrhosis a termination of this disease only.

The next point to claim our attention, is the important role played by the *pleura*. An autopsy of diffused cirrhosis of the lung, always shows the pleura to be much involved. The two layers are adherent and transformed into a hard, thick, fibrous sac, often one centimeter in thickness. Through this the lung is attached to the inner wall of the thorax. The thickest, densest portion is mostly at the apex of the lung, while further down the adhesions get to look more like a cobweb.

By far the greater number of cases of cirrhosis of the lung have their origin in pleurisy, whether uncomplicated or as a concomitant of other acute processes. Corrigan (whose investigations justify the oft' applied name of Corrigan's cirrhosis of the lung) has shown, that the processes of chronic proliferation of connective tissue pass from the pleura to the lungs. This raises the question, whether all pleuritis processes (pleuritis sicca, serous effusion, empyema) lead to cirrhosis. In pleuritis sicca it is less likely on account of the usually rapid absorption of fibrine.

There can be no doubt that cases in which absorption of the exudation has required a considerable length of time, lead to cirrhosis, as they likewise do to *retrecissement de la poitrine*. Laënnec believed that hæmorrhagic pleuritis was most apt to lead to retraction. The true solution seems to me to be this: Any pleurisy (whether sicca, with serous effusion, hæmorrhagic, empyema or in connection with croupous pneumonia) may either primarily pass over into the lung by means of the sub-pleural

connective tissue, and continue as subacute interstitial pneumonia, or cirrhosis of the lung may be primarily caused by *retrecissement de la poitrine*, following the absorption of a pleuritic exudation.

That is, primarily, only so far as the lung itself is concerned, since it presupposes a pleuritic trouble. This is the only form in which chronic interstitial pneumonia can lay a claim to being an independent disease. It is evident that the claim is but a slight one. Let me add that in croupous pneumonia it is not so likely to occur, on account of the usual restitution of the pleura together with the lung exudation.

Besides pleuritis, other primary diseases of the lung may lead to cirrhosis. Bear in mind, however, that the inflammatory products (exudations, secretions) do not themselves undergo such change, but are subject to cheesy degeneration. One may imagine the process as one which, in consequence of the pulmonary affection, manifests itself as an extensive interstitial pneumonia, starting from the original seat of trouble. The question as to whether cirrhosis will supervene in any given case, is altogether a question of time, the same as in pleurisy. An exudation which does not begin to be absorbed directly upon the subsidence of the active process, or is not absorbed at all, acts as sufficient irritation of a subacute character. Now to any subacute irritation sufficient to give rise to renewed inflammatory exudation, the tissues respond by a development of connective tissue. Chronic interstitial pneumonia, then, may occur as a sequel to or in connection with:

1st. *Croupous Pneumonia*, for which we have the authority of Stokes, who quotes a number of cases uncomplicated by pleuritis, where after the absorption of the croupous exudation, the embotic condition existed and continued. The co-existence of a subacute pleurisy might in these cases have readily escaped the best observer. 2nd. As a result of *Catarrhal Pneumonia*, Bartels found in a number of cases, which had run a chronic course, the lower lobes in a embotic condition.

3d. As a result of *collapse of the lung*, either primarily or as a sequel to catarrhal pneumonia consequent upon the collapse.

4th. Consequent upon *gangrene and abscess of the lung*. You know that in the healing process the destroyed part is bordered by connective tissue. From this cicatrix the process of shrinking may extend to the rest of the lung.

5th. Interstitial pneumonia is said to be complicated *chronic bronchitis*, the discussion of which we leave for the chapter on peribronchitis.

6th. The development of *cancer*, the presence of *hemorrhagic infarct* and *apoplexy of the lung* lead to incapsulation by connective tissue, a sort of local cirrhosis. It is doubtful whether a whole lung can become involved in the process in such cases. In embolism (embolic pneumonia so called) the pleura is secondarily involved. This is to be accounted for thus: The embolus originates in the right side of the heart or is carried to it by the peripheral circulation, and entering the pulmonary artery clogs up the sections of lung circulation, but this is speedily made up by other branches of the pulmonary, whose compensating distension is assisted by the elastic yellow fibrous tissue. Hyett has lately established the fact that the branches of the pulmonary artery pass directly into the pleura. The pleural vessels are not in intimate relation with the bronchial arteries.

In a certain sense the deposit of tubercle and more particularly the softening of tubercular masses gives rise to interstitial pneumonia, "with nutritive exudation." (Virchow.) But this process is decidedly a local one, not extensive enough to be dignified by the designation of interstitial pneumonia. Through it originate the connective tissue capsules, which serve to separate tubercular products from normal lung tissue. When we come to speak of tuberculosis, I will endeavor to show that tubercular invasion is apt to supervene during the progress of chronic interstitial pneumonia and often causing rapid death.

These articles do not concern themselves with diagnosis. Yet it may not be amiss to speak of the importance of the patient's previous history of the trouble; its inception; of the emphysema accompanying its further progress, and the consequent displacement of the liver, spleen, diaphragm and heart—as well as to mention bronchiectatic caverns, which are often dry.

Two diagnostic points are of great value in this connection. They are: 1st, Almost total absence of fever during the progress of chronic interstitial pneumonia and until tubercular infiltration supervenes; and 2nd, The character of the cough and sputa, of which Niemeyer says: "Hard attacks of cough, repeating themselves at long intervals, by the force of which large quantities of stinking sputa are expectorated, are pathognomonic of bronchiectatic caverns."

ARTICLE I.

MYDRIASIS. By WILLIAM DICKINSON, M. D., of St. Louis, Mo.

Mydriasis is the term employed in ophthalmology to simplify the pupil of the eye in the state of abnormal dilatation. It is, therefore, not a disease, but simply a symptom of disease. In the state of health the pupil contracts and dilates when the eye is exposed to the alternate access and absence of strong light. The mechanism, by which these phenomena are effected, resides in two systems of muscular fibres, arranged in reference to the pupil, in a circular and radiate manner. These muscles are animated by the ilary nerves derived from the ilary ganglion, situated in the orbit between the optic nerve and the external rectus muscle. This ganglion is formed by the united contributions of the third and fifth cranial nerves and the sympathetic from the carotid flexus. Composed of such varied factors, harmoniously commingled, it derives its motor functions from the third cranial and the sympathetic nerves, the former being distributed to the circular and the latter to the radiate muscles of the iris. When, therefore, the third nerve is paralyzed from intra-cranial affections or from lesion of the cerebro-spinal axis, mydriasis (dilatation of the pupil) takes place. This condition is usually a paralytic symptom. Galvanization of the sympathetic, or irritation of the same at some remote part, may also produce mydriasis, the energy of the radiate preponderating over that of the circular muscle. The same effect may follow the instillation into the eye of atropine or hyosciamus. Mydriasis is a concomitant of many incurable affections which terminate in blindness. These we do not now propose to consider. I shall narrate a few cases illustrative of mydriasis due to curable causes, even though the causes, sometimes, may be quite obscure.

OPTIC NEURITIS AND REFLEX PARALYSIS OF THIRD CRANIAL NERVE,
FROM GAZING AT THE SUN.

Geo. C., aged 8 years, was led into my office in May, 1865, having the gait and general aspect of an amaurotic person—head quite erect, the pupil widely dilated and the eye gazing

upon vacancy. For five or six weeks he had complained of pain in his head, and of not "seeing good," but had continued attendance at school. Meanwhile he had been observed by his teachers and companions to assume unusual attitudes and perform strange acts. Upon inquiry it was ascertained that with other boys he had indulged in the pernicious practice of gazing intently at the sun in trials to see who could longest endure the act. For it he was in danger of paying a heavy penalty, for on the 17th of May vision was nearly lost, and he began to complain of deep-seated pain in the center of his forehead. On the 20th he was, when first seen, totally void of vision; optic neuritis was present, with reflex paralysis of the third cranial nerve. Under the combined agencies of local depletion, cold applications, dry cups to temples, cathartics, pediluxia and blisters over the mastoid process, vision was gradually regained. Some weeks were, however, required for the treatment. Five years later I was consulted in his behalf; he then was affected with myopia with staphyloma posticum and extensive pigmentary deposits in the periphery of the optic disc. These phenomena were probably the result of lesions received in earlier years while gazing at the sun.

FROM IRRITATION OF THE SYMPATHETIC.

Mr. C., aged 35 years; occupation a clerk. Mydriasis supervened without obvious cause in left eye, interfering much with usual vision. In this case the affection was unquestionably due to some irritation in the intestinal tract. Under the employment of cathartics and also calabar bean to the eye the pupil contracted to its normal size and simultaneously his usual vision regained. No cerebral symptoms were present.

FROM UTERINE IRRITATION COMMUNICATED TO THE SYMPATHETIC.

Miss L. M., age 19 years, was afflicted with mydriasis simultaneously with her catamenia, which junction had recurred at the usual period. No marked causes could be ascertained. By the use of the means employed in the preceding case the pupil gradually contracted, and normal vision was restored.

Miss W., aged 30 years, was suddenly afflicted with mydriasis while in the act of reading, first in one eye, and after an interval of an hour or two, in the other also. Vision was greatly obscured and diminished. Her catamenia had been irregular, having now been suppressed for several weeks. By the use of warm

hip baths, aloetic purges and calabar bean to the eyes, the pupils ultimately regained their normal size, and normal vision was restored.

Except when caused by organic disease of the brain, usually one eye only is affected with mydriasis.

In one very interesting case, too lengthy for present narration, in which the pupils of both eyes were widely dilated, with total incapacity to discern any object or even light, this condition was due to the administration of quinine. It occurred in a lad of 10 years of age, afflicted with intermittent fever. From the combined agencies of counter-irritation, cathartics, pediluvia, alteratives, etc., the patient in a few weeks gradually regained the normal use of his eyes.

Mydriasis has been observed as a precursor of insanity.

ARTICLE II.

A NEW CLASSIFICATION OF THE CEREBRO-SPINAL NERVES. By SAMUEL S. LAWS, M. D.,* President of the State University of Columbia, Mo.

LAWS, 1877-8, A. D.		WILLIS, 1664, A. D.	SCHEMMING, 1778, A. D.
A. MOTOR NERVES IN PAIRS:		Pair.	Pair.
1	<i>Cranial</i> —1. Oculomotorius	III.	III.
	2. Trochlear	IV.	IV.
	3. Small root of V	V s. root.	V.
	4. Abducens	VI.	VI.
	5. Facial	VII. por. dn.	VII.
	6. Spinal accessory	VIII. 3 root.	XI.
	7. Hypoglossal	IX.	XII.
2	<i>Spinal</i> —31 Pairs anterior roots.		
38 Pairs of Motor Nerves.			
B. SENSORY NERVES IN PAIRS:		Pair.	Pair.
1	<i>Cranial</i> —1. Olfactory	I.	I.
	2. Optic	II.	II.
	3. Trifacial	V. large root.	V.
	4. (Taste?)		
	5. Auditory	VII. por. mol.	VIII.
	6. Glossopharyngeal	VIII. 1 root.	IX.
	7. Pneumogastric	VIII. 2 root.	X.
2	<i>Spinal</i> —31 Pairs posterior roots.		
38 Pairs Sensory Nerves.			

* Extracted from the Proceedings of the Missouri State Medical Association, by permission.

REMARKS.—1. I have been teaching this new classification to my classes, during the current collegiate year, with very satisfactory results, as compared with experience in teaching the accepted but complicated and confused classifications of Willis and Semmering. In October and November, 1877, I taught my own classification, as given above, to my class in Psychology; in February 1878, I taught it to the Medical School, and in May, 1878, to the Normal School of the Missouri University.

2. The obvious TEST of my classification is the function of the several nerves at their apparent or superficial origin. Experiment has demonstrated that the Glossopharyngeal and the Pneumogastric are "exclusively sensitive" at their origin, and hence they are given above as sensory.

3. The VALIDITY of this test is vindicated by the persistence with which nerve fibres maintain their identity of tissue and function from their origin throughout their remotest and minutest distributions. If a skein of silk be taken to represent a sensitive nerve at its root or superficial origin, and a skein of cotton, a motor nerve at its root, then we have mixed nerves only by virtue of the joining together, somewhere along their line of distribution, of some of the threads of those distinct skeins; but just as the silk thread always remains a silk thread, and the cotton thread a cotton thread, so the sensory filaments and the motor filaments of their respective roots, never lose their identity and distinctive function. This is equally and alike true of cranial and spinal nerves. This persistence of individuality and function is a settled fact, and therefore a solid basis of discrimination. When a sensory nerve takes on a motor function, this arises from its taking on, or into association with its own peculiar fibres, the fibres of a motor nerve, or of several motor nerves.

4. In the current classifications of Willis and Semmering the nerves of different functions are jumbled together without discrimination or system: e. g.: The first and second pairs are exclusively sensory; the third and fourth, exclusively motor; the fifth, both motor and sensory, etc. And in the spinal nerves there is the same confusion, for 31 pairs are now set down, whereas, functionally and anatomically, there are critically and notoriously 62 pairs, if the distinction between motion and sensation is heeded in connection with the persistent identity of the root fibres. The new classification given above clearly recognizes all these distinctions and avoids all this confusion, to say

nothing of its scientific value in explaining the phenomena of sensation and motion, both physiologically and psychologically.

5. The only undetermined point in this classification is indicated by the interrogation point after TASTE. The flaw, however, is not in my classification, but in the present condition of the subject. Physiology and anatomy have not yet settled what is the gustatory nerve. If, in settling this controversy, a distinct pair of nerves be individualized for taste, then the symmetry of the nervous organism in detail, indicated above, will be seen to be as complete as that of any other part of the body. Indeed, it may not be too much, to say that this new classification is prophetic of such individualization as perfecting the equilibrium of the groups. But I wish my present statement to stand clear of detail, and hence hold in reserve at present any further notice of this open question.

6. The only proper definition of a sensation is that it is a consciousness of any change in the nervous organism. Its location is in consciousness, therefore, not in the bodily organism which only conditions the occurrence of sensation. That portion of our organism which conditions sensation is, for the sake of clearness, very properly called the SENSORIUM. The sensorium, then, should properly consist of these 38 pairs of sensory nerves, together with their ganglia taken in their totality.

7. In like manner the 38 pairs of motor nerves, with their ganglion connections, might be termed the *motorium*. The sympathetic system is a motor system, and if included under the general term, then there should be a sub-division of the general motorium into the automatic or vital, the reflex and the voluntary. But mind appears to stand in proximate relation to the cerebro-spinal motorium and sensorium. And whether the distinctive attributes of mind be at all traceable below these cerebro-spinal systems in the animal kingdom, is open to further investigation.

8. It is important that the automatic and reflex excitations of the sensorium and of the motorium be not confounded with conscious excitations, as the former, being unconscious, have only a physiological value, whereas, the latter have, also, a psychological import.

The significance of remarks 6 and 7 is illustrated by, but is not dependent on, the new classification.

Respectfully submitted to the Missouri Medical Association, met at Sweet Springs, May 21, 1878.

Translations from the German.

ARTICLE LI.

ON DISTURBANCES OF VISION IN CONSEQUENCE OF LOSS OF BLOOD.

By D. C. HORSTMAN, Berlin. [Translated from *Klinische Monatsblätter für Augenheilkunde*, April, 1878, for THE JOURNAL. By WM. DICKINSON, M. D., of St. Louis.]

R. F., 40 years of age, a worker in leather, consulted me in May, 1874, having in previous years been affected with attacks of hæmatemesis. This occurred again fourteen days since; three days afterwards his vision became very much diminished, his complexion was pale; pressure over region of the stomach was painful; stools normal; other internal organs were healthy. Both eyes were normal in external appearance; dioptic media clear, and pupil acts normally to stimulus of light. The optic nerve entrance of the right eye presents a normal contour inferiorly, but superiorly it is obscure, and this obscurity extends into the retina above two diameters of the papilla. The arteries of the fundus are unchanged, but the veins are somewhat enlarged but not tortuous. A similar condition exists in the left eye, but to a greater degree. With the left eye aided by positive glass No. 23, he can read No. 3½ of Snellen at 10 inches; with right and same glass No. 1½ at 10 inches. At the expiration of six weeks the condition of the several parts remained unchanged, though vision somewhat improved. Three years later each papilla seemed whiter than usual, having in the interim suffered no recurrence of hæmatemesis.

L. S. Meher, 44 years old, presented himself July, 1876. He was a man large and robust. Four years since had an attack of typhoid fever, having previously enjoyed perfect health; but since that time has suffered frequently from gastralgia. One year since had a severe attack of hæmatemesis, which recurred on the second and third day thereafter. After eight days upon awakening in the morning he observed that he was entirely blind, not able even to distinguish light from darkness, and no change has since taken place. Disease of no internal organ could be detected; both eyes normal in appearance, and the pupil evincing no reaction to the stimulus of light. Refractive media clear; the color of the papilla was of a whitish color; the arteries large; the veins contracted in some degree; total amaurosis had taken place; the eyes examined after a long interval had undergone no change.

A man 28 years of age, had never suffered except from stomach disorders; for a year and a half has had frequent attacks of pain in the epigastrium, and occasionally severe attacks of vomiting of blackish red masses of blood. Seven days since in the course of six hours, his vision became totally extinguished. This condition continued for fourteen days. Slight improvement in vision afterwards took place; in four weeks he could discover large objects about him, and later with the left he could distinguish fingers at ten and a half feet distant; with the right the same at four and a half feet. The various parts of the eyes had undergone but slight deviations from the normal conditions. The patient was ordered nutritious diet and iron. Six months later not the least improvement in vision had taken place.

A woman, M. R., 37 years of age, had been blind four years; had given birth to five children. Four years since she had a miscarriage and on several occasions suffered from a profuse loss of blood. Seven days thereafter, in the course of eight hours she became totally blind, not having even perception of light. Total amaurosis was the result. No affection of internal organs. Tension of both globes normal; the pupil widely dilated, exhibiting no reaction to access of light.

Another case of a woman of 33 years, previously healthy, who seven days after a miscarriage and a considerable loss of blood became totally blind, and thus remained.

Disturbances of vision may occur suddenly after hæmatemesis and metrorrhagia; both eyes are then generally affected. They seldom take place immediately after the loss of blood; usually supervene between the third and the fifth or seventh day thereafter; may not until the fourteenth. The amaurosis consequent thereupon is generally incurable.

Of 41 cases recorded, 31 were from hæmatemesis, and 12 from metrorrhagia; in all of which cases impairment or loss of vision occurred fourteen days after the efficient cause. Permanent amaurosis resulted in *twenty-one* cases; in one eye, amblyopia, amaurosis in *six*; double amblyopia in *nine*; amaurosis in one eye, while the other remained intact, twice; a return to full power of vision observed in only *four* cases. Atrophy of the optic nerve was the condition generally ascertained.

Among the subjects treated are congenital anophthalmos; primary syphilitic ulcer of the lid, congenital dislocation of the crystalline lens in six persons belonging to one and the same family: 1. Woman, 59 years, lens was dislocated upward and inward; 2. Man of 37 years, lens of right eye dislocated inward, the left inward and somewhat downward; 3. Man of 35 years, lens of right upward and inward, that of the left inward; 4. A girl of 10 years, lenses of both eyes inward; 5. A boy of 5 years, lens of right upward, that of the left upward and inward; 6. A boy of 7 years, lens of right upward and outward, that of left upward and inward.

Selections.

LITHOTRITY BY A SINGLE OPERATION.* By HENRY J. BIGELOW, M. D., Professor of Surgery in Harvard University; Surgeon of the Massachusetts General Hospital.

When Sidney Smith asked, "What human plan, device, or invention two hundred and seventy years old does not require reconsideration?" he would no doubt have regarded with favor an occasional reconsideration of the theory and practice of medicine and surgery,—especially in view of the current belief that their traditions have been kept alive and their rules prescribed in part by authority. The surgical literature of lithotomy, both French and English, so long showed the influence of the early specialists that we have hardly now escaped from its exaggerated circumstance and detail. And yet, with attention to a few precise rules, the operation of lithotomy is quite a simple one—much less difficult, for example, than the dissection of tumors. It is not impossible that convictions in some degree traditional may prevail in regard to certain points connected with the practice of the more recent art of lithotrity.

Civiale was among the first to inculcate the excessive susceptibility of the bladder under instruments. Later surgeons, perhaps influenced in part by his teaching, have continued to invest the operation of lithotrity with precautions which, though by no means groundless, because under certain conditions both the bladder and the urethra are actively resentful of even slight interference, are nevertheless greater than this operation generally requires. As a rule, there is little difficulty in it. The stone is readily caught and broken into fragments, of which a few are pulverized; a large-eyed catheter is then sometimes introduced; a little sand and a few bits are washed out; after which the patient is kept quiet to discharge the remainder, and await another "sitting." Under favorable circumstances, such an operation, lasting a few minutes, is not only simple, but safe. Yet the fact that it is not always so could not fail to arrest the attention of surgeons. It may happen that during the succeeding night the patient has a chill; not the chill of so-called "urethral fever," which sometimes follows the mere passage of a bougie, and which is of little consequence, but one accompanied or followed by other symptoms, such as tenderness in the region of the bladder, a quickened pulse, and the frequent and painful passage of urine. These symptoms may insidiously persist rather than abate. Others may supervene. The surgeon vainly

* From the American Journal of the Medical Sciences, Philadelphia, January, 1878. With additions.

waits for a favorable moment to repeat his operation; it becomes too evident that the patient is seriously ill, and it is quite within the range of possibilities that in the course of days or weeks he may quietly succumb. An autopsy discloses a variety of lesions—some of them remote or obscure, others of more obvious origin—and among these, not the least common, an inflamed bladder, upon the floor of which angular fragments and chips of stone are resting. It is then evident that during a certain interval before death the bladder was not in condition for further instrumental interference; and although, in view of the fatal result of delay, lithotomy or active lithotrity, to both of which in cases like this I have resorted, might have been on the whole the least of evils, it is plain that either operation would have furnished in itself an additional cause of serious inflammation.

Such a result might be supposed to point to the necessity of extreme precaution; and it will be justly urged that the purpose of such interference at an unfavorable moment is the removal of the offending fragments as a last resource. But if at the first operation the bladder could have been completely disembarrassed of every particle of stone, even with the risk of irritating its lining membrane, we can hardly doubt that the relief would then have been followed by ready repair. In short, it is difficult to avoid the conviction that in an average case damage to the mucous membrane, and quite as great, is as likely to follow the persistent irritation by angular fragments as the protracted use of instruments for the entire removal of a stone, if this result can be accomplished.

It is probable that the injury from the use of instruments has been in some measure confounded with that resulting from the presence of fragments in the bladder. That the average bladder and urethra have no extreme susceptibility is attested by the generally favorable results of lithotrity, and even of catheterism, which are practiced with very varying skill everywhere; also by the singular innocuous results of laceration of the contracted urethra, by an instrument like that of Voillemier, for example; so, too, by their recovery from the considerable injury inflicted during the extraction of a large and rough stone in lithotomy. The bladder is often also tolerant to an extraordinary degree of the presence even of a mulberry calculus. If we remember that in this case it clasps the stone at every micturition, often with a persistent gripe, the comparative immunity of its tender mucous membrane is quite remarkable. But when sharp fragments are thus embraced, presenting fresh and acute angles, which do not soon become blunted, and to which the bladder is unaccustomed, it is more remarkable that serious consequences are the exception and not the rule in lithotrity. Polished metallic surfaces carefully manipulated can hardly do such damage as the agencies here enumerated.

Gentleness, dexterity, and experience are especially to be

valued in lithotrity. It has been well said that no novice should undertake this operation. But the habit of confounding the symptoms resulting from the presence of fragments with those following the use of instruments originally led to precautions in the introduction and manipulation of the latter which were sometimes excessive. Civiale, with an almost unparalleled experience, introduced a small lithotrite with much less pressure than its own weight, and with uniform and great slowness. And yet, in a healthy urethra, it is only at the triangular ligament and beyond it that such extreme care is called for. Civiale, who had no means of evacuating fragments in the bladder, restricted the length of his operation to two or three, or perhaps five minutes. The same solicitude seems to have led Sir Henry Thompson, in his admirable and standard work upon this subject, to assign two minutes as the proper average duration of a sitting—a period which his exceptional skill has often in his own practice enabled him materially to reduce. I have been gratified to find, however, that since he has availed himself of the advantage of etherization he recognizes the benefits to be derived from somewhat more prolonged manipulation. My own conviction is that it is better to protract the operation indefinitely in point of time, if thus the whole stone can be removed without serious injury to the bladder. I believe that in any case which is as favorable to lithotrity as the average, in these days when stones are detected early, this can be effected; and that if the bladder be completely emptied of detritus, we have as little to apprehend from the fatigue of the organ consequent upon such manipulation as from the alternative of residual fragments and further operations. The duration of the sittings in the cases reported at the end of this paper varied from three-quarters of an hour to three hours and three-quarters. The bladder can be thus completely and at once evacuated, in a majority of cases. The stone, after crushing, can be removed through the urethra by a tube contrived for the purpose.

But has not this result already been attained by evacuating instruments variously devised and modified? The following quotations from the latest authorities sufficiently answer this question in the negative:

"We may here say, without fear of being accused of exaggeration, that evacuating injections practiced after sittings of lithotrity have no apology for their use. *The whole surgical arsenal invented for their performance is absolutely useless..... It should be well understood that the best of the evacuating catheters is worthless.*" (Article Lithotritie, by Demarquay et Cousin, in the *Nouveau Dictionnaire de Médecine et de Chirurgie pratique*, Paris 1875. Pages 693, 694.)

"*The practice of injecting the bladder to wash out detritus is obsolete..... This apparatus of Mr. Clover should not be employed, if it be possible to dispense with it, as its use is quite as ir-*

ritating as lithotritry itself." (S. D. Gross, Diseases, etc., of the Urinary Organs. Philadelphia, 1876. Page 232.)

"Having used it very frequently (Clover's apparatus), I would add that it is necessary to use all such apparatus with extreme gentleness, and *I prefer to do without it, if possible.* (Sir H. Thompson, Practical Lithotritry and Lithotomy. 1871. Page 215.)

"*All these evacuating catheters are little employed. They require frequent and long manœuvres which are not exempt from dangers; besides they give passage, as a rule, only to dust, or to little fragments of stone, which would have escaped of themselves without inconvenience to the urethra.*" (Article Lithotritie, by M. Voillemier, Dictionnaire Encyclopédique des Sciences Médicales. 1869. Page 733.)

In short, the "evacuating apparatus" hitherto employed does not evacuate.

It is not a recent contrivance. From the earlier days of lithotritry, the operation of breaking the stone has been followed by the obvious expedient of introducing a large and special catheter, through which water was injected and allowed to escape, bringing away a little sand, with a small fragment or two. This attempt at evacuation was aided by suction. With this object, and before the year 1846, Sir Philip Crampton employed an exhausted glass globe. For the same purpose a syringe has been used, or a rubber enema or hydrocele bottle, with which fluid could be also injected and the bladder washed. By entering the catheter well within the bottle or syringe, fragments were dropped inside the neck, where, lying below the current, they remained when the bottle was again compressed. When this neck was made of glass, by Clover, the fragments became visible, as in Crampton's globe, and to this neat arrangement the accomplished lithotritist, Sir Henry Thompson, refers as Clover's bottle. But neither the previous practice nor the efficiency of evacuation by suction through a tube had been materially advanced. In the meantime the syringe was modified in France by a rack and pinion attached to the piston, so that water could be injected and withdrawn with great force, a procedure not only useless but detrimental to the bladder if it be inflamed and thickened.

Before describing my own instruments it may be well to say a word in regard to the introduction of instruments, especially large ones, into the bladder—an important subject in this connection.

A syringe facilitates an abundant use of oil in the urethra or within a tube. Into the normal urethra a straight instrument can be introduced with at least as much accuracy as a curved one. Either may be passed rapidly as far as the triangular ligament, unless the instrument is very large, in which case great care is

required not to rupture the mucous membrane. Having reached this point, which implies that there should have been no premature endeavor to turn the instrument, but that it should be passed as far as it will go in the general direction of the anus, the extremity of the instrument depresses the floor of the urethra in front of the ligament. Traction upon the penis next effaces this depression, and adds firmness to the urethral walls; so that if the instrument be withdrawn a little, and at the same time guided by the bony arch above, it can be coaxed without difficulty through the ligament in question—a natural obstruction which physicians often mistake for a stricture. This obstruction passed, the rest of the canal is short, and corresponds to the axis of the body, to the line of which the instrument is now depressed. Even the enlarged prostate can often be traversed advantageously by a straight instrument. In fact, a prostatic catheter, as is well known, consists essentially of an inch or two of straighter tube added to the extremity of a common catheter, to reach through the unyielding prostate before the hand is depressed and the beak turned up. In passing either a sound, catheter, or lithotrite, the extremity of a straight instrument, and, curiously enough, the convexity of a curved one, is sometimes arrested just at the entrance of the bladder by the firm lower edge of the inner meatus. The fact that water now passes through the inner meatus, thus dilated, or that a stone is felt with the tip of the curved instrument, which has really entered the bladder, may lead the operator into the mistake of supposing that the instrument is fairly in it; and I have known its further entrance, after sliding over this obstacle, to be erroneously explained by assuming the existence of a second or hour-glass cavity in the bladder itself. To obviate this difficulty, and so soon as the triangular ligament is passed, the catheter, if curved, should be pressed through the indurated neck or prostate, in the direction of the axis of the body, by the hand on the perineum—a most efficient maneuver when the prostate is large. If there be doubt the tip should of course be sought and guided in the rectum. After introduction a straight tube or the shaft of a curved one often returns to an angle of about 45° with the recumbent body, and, if the patient is not etherized, a feeling of tension may then be relieved by depressing, with the hand upon the pubes, the suspensory ligament of the penis—an expedient also useful during the passage of the instrument.

My own practice has always been to etherize for lithotomy.

Each operator prefers the position to which he is accustomed, and when the urethra is healthy this is of very little importance. But if there be stricture or prostatic obstruction a position at the patient's left side, the operator to hold and direct the instrument to advantage with the right hand, leaving the left hand free to act in the perineum. After the instrument is introduced, and both hands are required above the pubes, they are most

available if the surgeon changes his position and stands upon the patient's right.

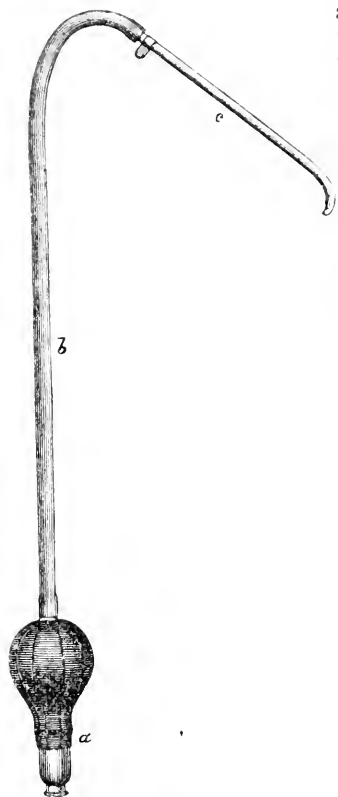
It is important by a preliminary injection to ascertain carefully the capacity of the bladder by emptying it and then refilling it slowly with warm water, previously measured, until the water is expelled through the loosely held urethra by the side of the tube. In this way we prevent its over-distention. In the etherized subject a short pipe or nozzle suffices for this purpose. I have for many years employed a common Davidson's syringe. An unetherized patient may for a moment resist this injection through a short tube by contracting the sphincter of the bladder, but this readily yields. Except in a large bladder a distension by eight or ten ounces suffices for breaking the stone. The smaller the injection the more readily, indeed, do fragments fall into the blades of the instrument. But, unfortunately, so also does the mucous membrane. In fact, with too little fluid in the bladder the use of a lithotrite in unpracticed hands is attended with danger; and in a long sitting an injection which will render the walls moderately tense is the only really safe way of keeping the bladder from between the blades. After careful examination of the action of a lithotrite through an opening in the summit of the bladder, I have returned to this opinion which was held by the older writers on this subject. From time to time the diameters of the collapsing bladder should be estimated by carefully opening the blades of the lithotrite, and water should be introduced when necessary; but care should be taken not to injure a contracted bladder by first distending it, and afterwards adding to it the contents of the syringe or aspirating bottle.

A tape or an elastic band wound lightly once or twice around the penis retards the escape of injected water, and yet allows the movements of the tube or lithotrite.

In order to ascertain the maximum calibre of the urethra before introducing a tube, it should be measured by an instrument which will enter more readily than the tube. Such instruments we have in Van Buren's sounds, which are slightly curved at the end, and a little conical. Being made of solid metal, and nickel-plated, they traverse the urethra with singular facility. Otis' sounds also answer admirably for this purpose.

EVACUATING INSTRUMENT. (Figure 1.)—The following points are worthy of consideration in connection with any evacuating apparatus. The ten-ounce elastic bulb or bottle supplied with the usual instrument is inadequate to the exhaustion for which it is designed. It will barely sustain, without collapse, a vertical column of water of the length of a catheter. A thick flask fatigues the hand of the operator. The bulb is also an awkward weight on the top of the catheter. These difficulties are obviated by interposing between the catheter and bulb a piece of

rubber tube, varying in length as the surgeon may prefer, from six inches to two feet, to relieve the bladder from the force of any movement of the apparatus, and, what is more important, to allow the operator to hold the bulb on a level with the water in the bladder, or considerably below it. The exhaust then acts



(Fig. 1.) Evacuating Apparatus. *a.* Elastic bulb and glass receptacle with brass cap, for debris. *b.* Rubber tube two feet in length. *c.* Evacuating tube of silver.

as a siphon, and readily draws off the water. The fragments gravitate to the bottom of the bulb, and are there collected in a glass chamber. (See Fig. 1, 3, 4.) To prevent the possible return to the bladder of some single fragment while on its way to this receptacle, the rubber tube, if long, may be provided with a small glass trap containing a wire-gauze or perforated tube, to deliver the current and strain it on its return, but with a short rubber tube (Figures 3, 4), which is more convenient; this is not essential. One or two smaller bulbs might be provided for a contracted bladder.

The successful evacuation of the bladder depends upon several conditions, both in the apparatus and its use, which, for distinctness, may be enumerated separately.

(1.) *A large calibre of the evacuating tube.*

(2.) *Its shape.*

(3.) *The shape of its receiving extremity.*

(4.) *The manipulation of the bulb.*

(5.) *The evacuation of the fragments.*

(6.) *The immediate recognition and removal of any obstruction in the tube.*

(1.) *A large calibre of the evacuating tube.* Whether or not we adopt the view of Otis, that the average capacity of the normal urethra is at about 33 of Charrière, there can be no question that it will admit a much larger tube than that commonly attached to either Clover's or the French apparatus. The efficiency of the process of evacuation depends much upon using the largest tube the urethra will admit. This fact has been stated by Sir Henry Thompson. But he recommends for the glass cylinder

or trap which is to admit this tube a "perforation at the end, the size of a No. 14 catheter,"=25 Charrière.* This perforation is too small; and the tube which is designed to enter it is further reduced by its collar to the diameter of only 12,=21 Charrière. In fact, this is the calibre of the evacuating catheters now attached to Clover's instrument, and is of itself fatal to their efficiency. An effective tube has a calibre of 28 to 31 or even 32 Charrière, and the meatus, which is the narrowest part, may, if necessary, be slit to admit it, if the urethra is otherwise capacious. Again, in the instrument, as sometimes constructed by Weiss, a joint is made by inserting an upper tube into a lower one, thus obstructing the calibre by a shoulder. The joints should become larger as the tube approaches the bottle, and the tube then delivers without difficulty fragments of its own calibre. Whatever be the size of the evacuating tube, the rubber tube, with its metal attachments, should have a calibre of at least seven-sixteenths of an inch,=31 Charrière.

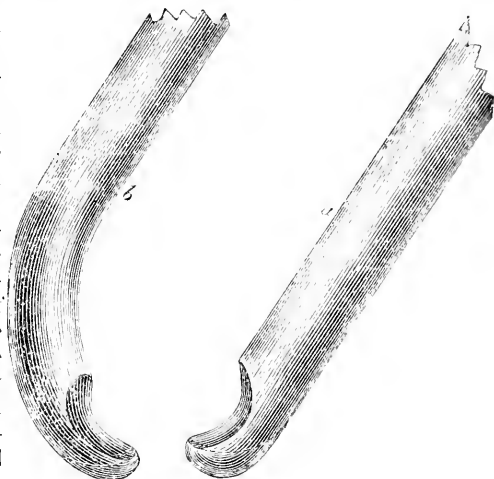
My evacuating tubes are of thin silver, of sizes 27, 28, 29, 30 31, filière Charrière, respectively.

(2.) *Shape of the tube.* Works upon lithotrity enumerate and figure a variety of tubes through which fragments are to be aspirated. Many of these are useless. The best tube is either straight, or curved quite near the extremity; the latter to be used with the curve inverted and directed downward, the orifice then looking forward. (Figure 2.)

(3.) *Shape of the receiving extremity.* The receiving extremity should depress the bladder when required to do so, and thus invite the fragments, while its orifice remains unobstructed by the mucous membrane. Upon the floor of the bladder when not indented, a fragment of stone, lying at the distance of half or even quarter of an inch from the tube extremity, may not be attached by the usual exhaust of the expanding bottle, which requires that the fragment should lie almost in contact with the tube. A very slight obstacle also impedes its entrance; and this fact renders inefficient all tubes like catheters, with orifices along the side or upper wall. Chips will not surmount their edge. Again, the orifice of a tube cut square is at once occluded by drawing in the vesical wall, while the spoon-shaped beak of the French instrument, made like the female blade of a lithotrite, allows fragments to lie too far from the opening in the tube. The best orifice is at the side of the extremity, and is made by bending the tube at a sharp right angle, carefully rounding the elbow, and then cutting off the bent branch close to the straight tube. (Figure 2 a.) The tube is then practically straight, while the orifice, which is slightly oval, delivers its stream laterally. The edge should be thickened and rounded to slide smoothly through the urethra, any rim inside the orifice should be masked

* Disease of the Prostate, 4th edition, 1873, page 337.

by a false floor, but the calibre should be nowhere contracted. If the side walls of this orifice be removed a little, it gives an unguiform extremity to the tube, which is advantageous; and in introducing such a straight tube this tip may be insinuated through the triangular ligament by rotation. If a couple of inches of the end of such a tube be bent, it may be inverted after introduction, and will bury itself in the floor of the bladder, which it depresses, while the orifice looks forward and is unobstructed. (Fig. 2 b.) This form is very efficient, although I prefer the straight tube as safer and more easily directed when in the bladder, less liable to lodge fragments, and more readily cleared by a rod. An effective instrument may also be made of a tube cut square at the end, if a disk convex outwardly, to repel the bladder, be attached to it, at the distance of a diameter, by a bit of stiff metal. This was the original of the straight tube already described. When such an instrument is introduced the interval can be filled by a rod.

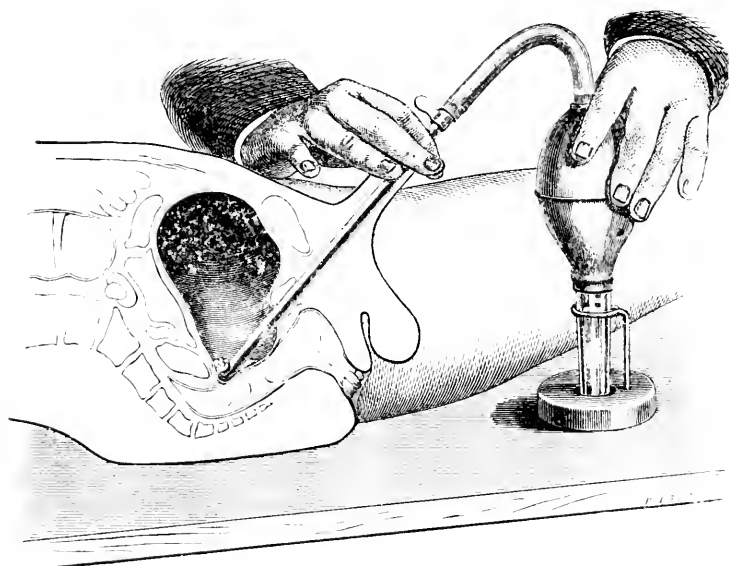


(FIG. 2.) Evacuating tubes, with unguiform extremity. *a*, Straight tube. *b*, Curved tube. The dotted lines show the false floor of the extremity. The tubes are here of a diameter 31 Charrière.

In fact, the orifice of a tube should be contrived with a view to its introduction. The French tube already spoken of, shaped like the female blade of a lithotrite, would be efficient, if it were made large enough—as it is not—and provided also it were kept standing upon its heel in the bladder, with the shoe bent to make a precipitously inclined plane for the fragments. It would then offer a prolongation of the unguiform tip; but thus sharply bent, it would be less easy to introduce. Whatever be added to the extremity of the tube, in order to facilitate its introduction or to repel the bladder, should not prevent the orifice from lying, if required, in the floor of the bladder at the apex of a steep inverted tunnel.

(4.) *The manipulation of the bulb.* When the capacities of the bladder and urethra have been ascertained, the evacuating tube is introduced and the bladder completely emptied. A few ounces of water are next injected, that the fragments may be

still floated after aspiration, and the apparatus, previously filled with water, is attached to the silver tube. To fill the bulb and at the same time expel the air, it should be held upright and several times compressed while the curved elastic is immersed in water. The latter is then carefully kept upper-most until attached to the evacuating tube. Air in the bladder is a disadvantage in distending it without floating the fragments. The large bulb, together with its tubes, contains about ten ounces. If compressed with one hand until the sides meet, only about five ounces are displaced. If half compressed, and then gently worked with a shorter movement, about two ounces are moved back and forth, so that, provided the tube itself be handled carefully and skillfully, the bladder is not greatly disturbed. At the



(Fig. 3.) The trap is here placed in a stand upon the table. The remaining fragments are few; and the capacious bladder is depressed to assemble them. The operator stands on the patient's left, and supports his right hand upon the thigh or pubes. This position is a convenient one during the whole evacuation.

beginning of the process the latter movement is sometimes effective. The object of more water is to prolong suction when fragments are passing freely, but also occasionally to stir up the debris, and especially to relieve obstruction in the tube when it occurs. A convenient position for the surgeon is at the right hand of the patient, resting his left wrist on the pubes to steady the tube, while the bulb is supported in a stand on the table between the thighs. (Fig. 3.) Or, the surgeon sitting between the supported feet of the patient, (Fig. 4) compresses the bulb with

the right hand, using the left alternately to hold the glass trap and to adjust the silver tube. But in this position the hand is apt, after a time, to bear heavily on the evacuating tube, so that

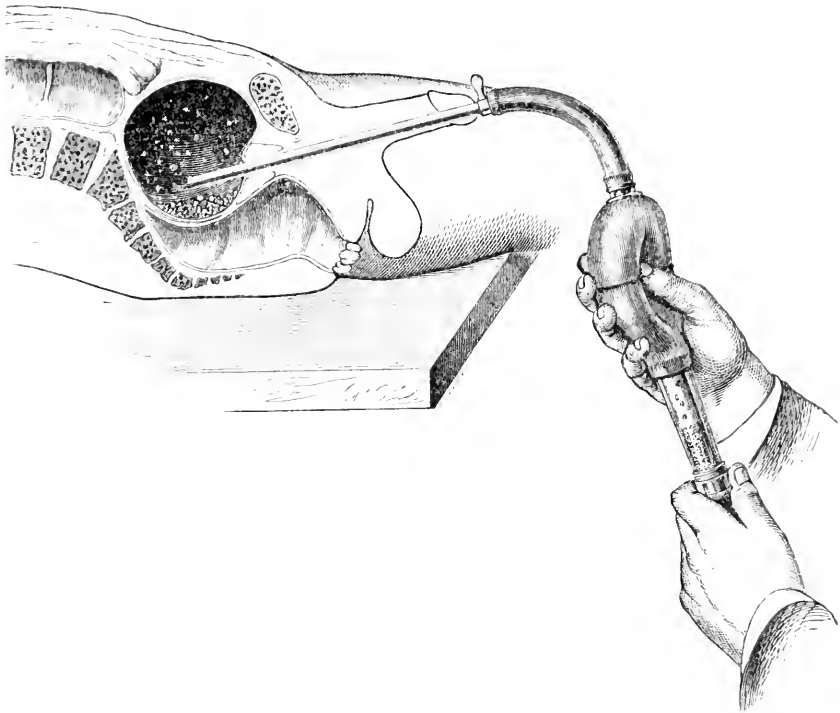


FIG. 1.) The operator is here supposed to sit between the thighs of the patient. The bulb has been compressed, and by its immediate expansion will aspire a part of the abundant debris suspended in the fluid above the fragments. [Photographed from a frozen section, in which the rectum and bladder were distended with plaster.]

it is better then to use the bulb as a handle to direct the silver tube, the interposed elastic saving the bladder needless fatigue.

(5.) *Evacuation of the fragments.* Evacuation of the fragments is quite an amusing art, requiring as much skill to accomplish the result in the shortest time as crushing them. Dexterity in the process will hardly be acquired without practice outside the bladder.* If the bulb be compressed and immedi-

* The bladder may be imitated by the lower two-thirds of an ox bladder (carbolized for cleanliness) suspended inside a vessel, which has a mouth of four or five inches diameter, to which it is tied. The vessel should be previously nearly filled with water. To show the different and more efficient action of circular currents in closed bladder, let the ox-bladder be tied to the evacuating tube, and held before a bright light. With a

ately allowed to expand, while the tube is held above the *débris*, the fragments should fall in a shower into the trap. The operation may be divided into a first and a last half. During the first half, while the fragments are numerous, the secret is to separate and float them by the injection, so that they may enter the tube in single file as they fall, without obstructing it. This is accomplished by keeping the orifice of the tube away from the floor, aspirating them quickly while on the wing, just above the comminuted mass. In the latter part of the process, and after the smaller *débris* has been removed, the tube may be made to indent the floor so as to gather instead of separating the fragments, and as a final measure the tube should be raised towards a perpendicular in order to carry the orifice nearer the prostate. Some of the chips are apt to collect behind the tube orifice. The tube thus raised lies behind these chips. An advantage of the inverted curved tube is that it keeps the prostatic region clear. But the straight tube may be occasionally turned forward with the same result. A very slight movement of the tube sometimes makes much difference in the rapidity of the evacuation, so that when it is on the floor of the bladder, or quite near it, and steadied by the hand upon the pubes or the thigh, if any one expansion of the bulb proves more successful than another, the precise position then occupied by the tube should be carefully maintained. On the other hand, when the tube is choked at each expansion, if it be withdrawn or tilted up a half or even a quarter of an inch, it may happen that a shower of *débris* at once appears in the trap. Higher in the cavity, while the *débris* is abundant, the orifice may be turned downward or partly sidewise, so as to project horizontal currents around the bladder, the fragments being aspirated as they whirl. During this part of the operation there should be no interval between the compression and expansion of the bulb, the object being to catch the fragments while suspended. If there be any pause, it should be after the expansion, to give them time to settle into the trap. Later, when the fragments are too few instead of too many, a second or more may be allowed before aspirating to gather them into the depression in the floor of the bladder; especially as even a teaspoonful of water lightly injected on the floor shoots the *débris* to every part of the cavity. This artificial depression, which is made by very slight force, plays an important part both in gathering the fragments for crushing, and, at the end of the process, for evacuation. In placing the tube at the different stages of the process, there is opportunity for a little tact, as in discovering fragments with a lithotrite.

tin tunnel secured to the summit of a human bladder (*in situ*) to aid in replacing the fragments, the process of evacuation can be rapidly repeated. Calculi may be initiated by coal of varying hardness, or by a bit of old grindstone; a lighter and tough material for crushing, and liable to impact, is the cheap compressed meerschäum.

(6.) *The immediate recognition and removal of obstruction in the tube.* It has been said that when the trap is held upright, as in its stand, fragments should appear in rapid succession, so that if a short interval elapses without the fall of debris into it there is obstruction. This happens not only when the bulb will not expand, when its dimple disappears reluctantly and its compression is difficult, but also when the current passes so freely that an impediment would hardly be suspected.

Obstruction occurs in several ways.

(1.) In the elastic tube, which may be accidentally bent at an angle or compressed. This should be looked at first. A bit is sometimes lodged by the injected current at the end of the elastic and can be displaced by pinching it.

(2.) Within the bladder the most common obstruction is at the orifice of the evacuating tube. A little practice will enable the operator to distinguish the encouraging rattle of debris passing this tube to appear at once in the trap (if upright), from the valvular click of fragments too large to enter it. This click is quite constant at the end of the process after the smaller chips have been sifted off. If the orifice be choked an effort should be made to expel the fragments in the ordinary way: first raising the tube into clear water above the debris, and then compressing the bulb with a short and forcible jerk. A half dozen such efforts rarely fail, but the rod may be introduced if necessary.

(3.) It sometimes happens that nothing appears in the trap, although the current passes quite freely, and the click of abundant debris is still felt. A scale or angular chip is then wedged inside the evacuating tube, which admits water but excludes fragments. This is worth remembering. The rod removes it.

(4.) If a fragment rattles back and forth in the evacuating tube without reaching the trap, there is obstruction high up. (See 1.)

(5.) The only other source of obstruction, and not an uncommon one, is by the wall of the bladder, when drawn against the tube with a dull thud or a rapid succession of jerks, not unlike the bite of a fish. The tube orifice may be moved to another part of the bladder where aspiration is more free. Perhaps the orifice has been accidentally turned sideways. It then readily engages the floor. Or the walls of the bladder are a little slack, and more water may be advantageously introduced to distend them.*

After a few dozen aspirations it may be found that all the fragments which can pass the tube have done so; and that many of them have, in some diameter, its full dimensions. By the

* The process of evacuation has been improved by repeated experiment since this paper was first published, and as here described shortens materially the time before occupied in drawing off the debris.

usual method of crushing, the lithotrite would now again be introduced, and again be followed by the tube.—*Boston Med. and Surg. Jour., Feb., 1878.*

[TO BE CONCLUDED.]

Proceedings of Medical Societies.

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President.

D. J. STETTINUS, Stenographic Reporter.

[Revised by the Committee on Debates for THE JOURNAL]

MEDICAL SOCIETY HALL,)
POLYTECHNIC BUILDING,)
ST. LOUIS, April 6th, 1878.)

DR. PREWITT:—On last Saturday evening a specimen of atheromatous degeneration in a young subject was presented; I have here a specimen taken from an older subject, the class of persons in whom we most usually find this form of degeneration. The patient was a gentleman 75 years of age—well-known in this city. During his last illness, in consequence of an attack of pleura-pneumonia, the heart sounds were greatly muffled but there was no bruit. A post mortem revealed no valvular disease, but the ventricles were dilated and their walls thinned. There was no aneurism of the aorta, but very great general dilatation of that vessel, as is not infrequently found in cases of extensive atheromatous degeneration, such as existed here. There was also a considerable amount of calcareous deposit in the coats of the aorta.

DR. HUGHES:—Did you learn at what time this trouble began?

DR. PREWITT:—I did not. I have attended the old gentleman in several attacks, and something over a year ago he was under my care with an immense carbuncle upon the back of the neck and occiput, which measured seven or eight inches in one direction and five or six in the other. At that time the heart's action was very much impaired, very irregular, and at times ex-

tremely feeble and death seemed imminent. There was then no bruit, neither aneurismal nor valvular.

As an evidence of the general condition, an excoriation upon his great toe had formed an ulcer, which had existed for several months, and had refused to heal up, to the time of his death. I regarded this as due to the impaired circulation and degenerate condition of the vessels of the extremities, and feared senile gangrene. The condition of the aorta was, doubtless, simply an index of the general condition of the vessels.

DR. WM. PORTER:—At the request of Dr. Prewitt I made the postmortem in this case, and there were some points of great interest in it. There was hepatization of the base of the left lung, congestion of the right lung and apex of the left, with evidences of pleuritic inflammation in both chests, but the chief point of interest centered in the aorta.

The right ventricle of the heart was at one point not more than one-third its normal thickness, and it was very much dilated; the left ventricle was hypertrophied. I think the diseased condition of the aorta was of long standing, as indicated by the fact that it was not simply a dilatation nor thinning of its walls, but a gradual enlargement of its calibre, and I think the obscurity of the heart sounds may be accounted for in this way. The amount of deposit, which I believe to be bony, was sufficient to create a bruit, but the cavity was so large that a sufficient current of blood could pass through without being very much impeded.

DR. CHAS. W. STEVENS (present at post mortem):—I have nothing to add in regard to the case. I was surprised to learn there had been so little indication of such an amount of calcareous deposit. The chief point of interest to me was that there was no murmur detected by the gentlemen who attended the case. I was surprised also at the rigid condition and the coexistent dilatation of the aorta.

DR. WM. JOHNSTON inquired as to the portion of the aorta involved and the condition of the pulse.

DR. PREWITT:—The ascending portion of the aorta was involved. As to the pulse, it was never very frequent, and was generally of good volume. Part of the time it was irregular and intermitting, but during the latter part of his illness was quite regular and steady.

DR. HUGHES:—Dr. Prewitt's case recalls to me that of an old gentleman, who died at the age of seventy and who had very marked heart disease for twenty years. During all that time he had been the victim of chronic asthma, such as we usually find accompanying this trouble. When tranquil he suffered but little from this cause. He had been much surprised that he had lived for twenty years, engaged in active pursuits, while la-

loring under such a serious malady, complicated by chronic asthma.

Fatty Degeneration of Placenta.

DR. FORD presented a specimen of fatty degeneration of placenta, delivered the day before, April 5th. The lady had had five children by a former husband. A second marriage five years ago had resulted in but a single pregnancy, of which this was a product. Fetal movements had not been felt for three days prior to delivery, and when seen by him two hours before the birth, the fetal heart could not be heard. He thought we ought always to hear the fetal heart after the fifth month. Appearances of the child indicated that it had been dead, since the cessation of the movements. The placenta showed evidences of fatty change, more marked in some lobules than others. The fetal membranes, also, were in a state of fatty degeneration, as shown by the microscope. There seems, moreover, to have been some placentitis. The amnion, as the result of maceration after death of fetus, separated easily from the chorion and hung as a large pouch along the cord. Ecchymotic patches within the membranes had probably existed for some time. The death of the fetus was doubtless due to the slow changes going on in the placenta. The mother had been perfectly healthy and free from pain. There had never been any still-born children before. He could not affirm that there was any syphilitic taint upon the father's side. The children by the lady's first marriage were perfectly healthy.

DR. HODGEN:—Please restate the site of the patches of ecchymosis.

DR. FORD:—Into the substance of the placenta and between the chorion and decidua reflexa, several inches beyond the edge of the placenta in some places. The fetus was rather shriveled, with signs of incipient decomposition—the skin separating easily.

Decidua Menstrualis.

DR. J. BERNAYS, JR.:—I have here a specimen of decidua menstrualis from a patient who for years had thrown off at each menstrual period a complete membrane accompanied by great pain and considerable hemorrhage. The surface of the membrane towards the uterine cavity is perfectly smooth, while the outer surface is full of villi, with fibrous coagulations. Intra-uterine injections of nitrate of silver and tannin failed to influence the disease. The only relief afforded was by section of the cervix and by subsequently keeping the canal patulous by tents. She is married and has borne one child since she had the disease. Others, however, have observed pregnancy to occur under these conditions. This throwing off of the membrane proves what Dr. Engelmann, Jr., has recently brought out—that menstruation is analogous to a short pregnancy.

Cancer of the Superior Maxilla.

I have here also a specimen of cancer of the superior maxilla. The patient, a woman aged 36, had erysipelas fifteen months ago, which was followed by a small pimple upon the right cheek immediately under the malar bone. It continued to grow steadily until when about the size of a hickory nut, a physician whom she consulted, pronounced it probably malignant. About two weeks ago she consulted me, and I concurred in the diagnosis and advised its removal, and three days after operated. It involved the bone, a portion of it occupying the antrum. On account of the softened condition of the bone, I could not perform the regular operation of severing the connections of the superior maxilla by the saw, but seized it with a pair of forceps and pulled it out as you would a tooth. The whole maxilla came away except some small portions removed by the sharp spoon or forceps. But slight febrile reaction followed, healthy granulations sprung up and the patient is now sitting up. None of the neighboring glands were enlarged; if they had been I would have taken them out.

APRIL 13, 1878.

Biliary Calculi.

DR. C. H. STEVENS:—It will be remembered that two weeks ago, I referred to a case of hepatic colic. I have here a number of the calculi taken from the case. The gall bladder contained eighty-two, most of them somewhat hexagonal in form and beautifully laminated—a singular fact in connection with them is that the laminae of the exterior are of precisely the same form as those of the nucleus, viz., triangular. (The gall-stones were exhibited to the Society.)

DR. MRDD read the following paper on

Sarcomatous Tumors.

The two specimens here presented are sarcomatous tumors. The leg was removed from Margaret C—, aged twenty-nine years; she was healthy prior to the development of the tumor and has now four children, all healthy, one of them born since the removal of the leg.

For ten years she suffered with occasional pain on lower side of left knee, and there has existed here a point sensitive to contusion. No enlargement was observed until the fall of '75, since which time the growth has been uniform and persistent.

It ulcerated in May, 1876. In September, 1876, she was admitted to the City Hospital. She was much emaciated; extremely sallow; very anæmic, with pale bluish colored mucous membranes.

The specimen now presents a large fungous mass with everted edges occupying inner part of knee-joint, and attached to the tissues over inner condyle of femur and head of tibia. She came to the Hospital to die, and with strict injunction from her

family physician to permit no one to disturb the tumor, as it would only hasten her death.

The tumor was an offensive mass, and the constant discharge flowing from it a very great drain upon her, and Dr. Dean, resident physician of the City Hospital, thought operative interference was demanded. Upon consultation it was determined to amputate. On Sept. 13th, a circular amputation was made above the middle of the thigh. The tissues seemed healthy, wound was closed; patient suffered no shock, but the stump remained inactive; slowly swelled and the stitches were cut on the fifth day. The wound opened and revealed the fresh-cut surface coated with thick layer of lymph; it remained utterly inactive for ten days or two weeks, and then granulation slowly appeared. Her general condition began at once to improve, and, notwithstanding a large bed sore formed, she gained in flesh and spirits from the day of its removal. She was dismissed in the early part of January, with the stump discharging but little and almost healed. I subsequently removed some spicula of necrosed bone and the opening in stump diminished and scabbed over.

She became pregnant and was delivered in August, '77, of a healthy, vigorous child; but about this time the tumor reappeared on anterior surface of thigh, but above the end of the stump and extended up to Poupart's ligament.

She again entered the City Hospital and about Sept. 20th, Dr. Hodgen removed the new growth. The femoral artery was so atrophied that it did not bleed when cut. About the 10th of Oct. and while still an inmate of the hospital she had what was supposed to be pleuro-pneumonia of left side in lower part of lung. She had violent cough, severe pain, and profuse expectorations, which disappeared in about two weeks.

Dec. 15th, 1877, I was called to see her at her residence, and found an indurated elevated border at the upper margin of cicatrix in groin; she was suffering also with severe pain in seventh and eighth intercostal spaces on left side, which continued with but slight intermission until death. In the latter part of January heart's action became extremely rapid, and very feeble and irregular, with occasional attacks of extreme prostration. Respiration rapid and imperfect; left thorax dull in upper part, but stomach resonance extended as high as sixth intercostal space in the lateral wall of thorax. About middle of February dullness extended to right border of sternum and to margin of ribs. Heart's apex beat at ensiform cartilage. The left thorax measured two inches more than the right. The subcutaneous veins were enlarged and quite prominent over upper part of left thorax. The line of dullness now rapidly extended downwards encroaching on the abdominal cavity.

March 12th, 1878.—Postmortem. It was found that the left thorax was filled with a cancerous mass, gelatinous in appear-

ance; the lung was collapsed and pushed upward against the posterior superior wall of the thorax; the mediastinum was entirely to the right of the sternum and convex upon its right side, thus diminishing very much the capacity of the right thorax. The diaphragm was pushed downwards, convex upon its inferior surface on the left side and beneath sternum, and it was entirely below the level of the ribs, while it presented on the left as low as the umbilicus. The spleen was displaced downwards and the stomach situated between the diaphragm and the liver was in the umbilical region, while the heart was entirely to the right of the sternum, with its apex pointing downward, and opposite the sixth right inter-costal space. The liver, spleen, intestines, abdominal glands and uterine healthy. The ovaries encased in a firm fibrous looking capsule.

The other tumor was removed from the inguinal region of a young man, aged thirty-four, a machinist, who first noticed the growth seven months prior to its removal, and says that it was observed soon after being bruised about the loins, by trying to get on a train while it was in motion.

At the time the patient presented himself at the City Hospital the tumor was apparently the size of a goose-egg, and situated above Poupart's ligament, between the external and the internal oblique, having its more fixed attachment at the pubes, but moving somewhat freely and evidently encapsulated. It extended through the muscular wall of the abdomen and was attached to fascia transversalis at least at two points, but I thought it did not involve the peritoneum. Its history and appearance made the diagnosis somewhat uncertain. I was inclined at first to think it was a fatty tumor, but after watching its growth for two weeks I concluded that it was a sarcoma. Upon consultation with Dr. Dean we concluded to remove it, and I believe accomplished its removal two weeks ago. The inguinal lymphatics on both sides, as also those of the axilla were enlarged.

Dr. H. T. Bontwell made microscopic examination of these different tumors and reports that they are of the same microscopic character, being spindle-celled sarcomas.

The history of the first case is one of extreme interest, not only to the surgeon but also to the physician. It illustrates clearly the course of one of the most malignant of the sarcomatous tumors. A sensitive point existed over the inner condyle of the tibia long prior to the appearance of the tumor. It ulcerated about six months after it was first observed; attained its present appearance after a year's growth. At the time of amputation the patient's vitality was almost exhausted, and yet no gland was involved. After the operation a period of nine months elapsed without any sign of recurrence; her health seemed perfect, she became pregnant and gave birth to a healthy child. The recurrence of the tumor was regional, not continuous, and the lymphatics were not involved unless the tumor of the groin may

have been connected with them. The infection was through the blood; possibly the involvement of the lung may have been through the emboli, and the pleura secondarily involved, but the portion of the lung examined was healthy and the attachment of the tumor which developed in the thorax was entirely to the pleura, so far as we could ascertain. These cases are of a class which are constantly present with the surgeon. The condition seemed desperate at the time Mrs. C. first entered the City Hospital, and there was but little inducement to make an effort to give her even temporary relief, yet how marked the benefit derived from the removal of the offensive mass, and the absence of the exhaustive drain.

Even the surgeon is often inclined to shrink from giving to his patients the benefit of operative interference in cases where a tumor is extensive and the constitution infected; but it is, I believe, a safe, judicious and humane rule to extirpate all cancerous growths where it can be thoroughly done and the patient survive the perils of the operation. I remember well a case about five years ago, of a cancerous tumor extirpated by Dr. Hodgen, from the axilla of a German, in the lower part of the city, in which the tumor surrounded the axillary artery, pushed its way up to the clavicle and first rib, and so enveloped arteries, nerves, veins, that with the most extensive and careful dissections of these structures we could not remove it entirely. We left the house thinking that it would have been as well for the patient had we not entered. The portion of the tumor that was left sloughed out, and the patient is to-day living and well. This tumor was, however, undergoing fatty degeneration. In another case, in which we excised in February, 1875, the anus, the lower part of the rectum and the neighboring tissue of buttocks and perineum, for epithelial growth, the patient recovered, surface healed kindly and quickly, but the tumor recurred; continuous recurrence I think. It sloughed out and again healed, and again recurred, only to slough out once more with each removal of the tumor, whether by knife or by slough. The general condition of the patient improved, and with each recurrence depreciation in general condition was marked and rapid. There can be doubt but the presence of a cancerous tumor, whether it be sarcoma or carcinoma promotes rapid constitutional infection, and that removal of the offending mass arrests or retards the infection.

DR. FORD:—In connection with deposits in the lungs, I may mention a case which I saw several years ago. I regarded it as a transformation of an adenoma of the mamma into encephaloid. The lady was married; had never borne children, though pregnant once or twice. A surgeon who had examined the case, pronounced it a case of simple adenoma; kept up pressure for four or five months, which had then to be discontinued. When seen by me the right mamma was five inches in diameter, hemi-

spherical in shape, the skin roughened and its papillae enlarged. The integument between the mammae and a portion of the left mamma had already become infiltrated. The axillary and cervical glands were very much enlarged. The apex of the lungs presented the physical signs of infiltration also. She died eleven days after I first saw her, and five or six weeks after involvement of right mamma, from asthenia, without ulceration having occurred. Encephaloid of the mamma is not often met with, and double encephaloid (involving both breasts) is exceedingly rare. I mention the case as illustrating the tendency to rapid systemic infection in cancerous disease of acute form like this, from diffusion of carcinomatous material through the internal organs.

Impaction of the Colon.

DR. PREWITT:—I have a portion of the ascending colon and lower part of the ileum, illustrative of a class of cases in which practitioners blunder more frequently, perhaps, than any other with which we meet. The patient, when first seen by me in company with Dr. Thos. Scott, had been sick for several days. He had, at the time, the evidences of general peritonitis, and was deeply jaundiced as well. The general peritonitis subsided to a great extent, leaving a swelling, induration and great tenderness in the right iliac and lumbar region. The history was that of inflammation originating in the ileocecal region, and we have here an illustration of the pathological condition we are called upon to treat in these cases. Dr. Scott will give the outlines of the case. On making a postmortem, we found evidences of the general peritonitis which had existed in adhesions, in every direction. The most marked evidences of inflammation were in the right iliac and lumbar regions. The free border of the caput coli and ascending colon were adherent to the abdominal wall by abundant plastic matter. On detaching this we found to the outer side of the colon, and between that and the abdominal wall, a large blood-clot, extending from caput coli to the lumbar region. This clot was in a state of decomposition and the colon in contact with it was gangrenous. There were various rents in the colon wall, through one of which a mass of blood in the bowel could be seen protruding and forming a part of the clot lying outside. There is no invagination through the ileocecal opening, nor was there any accumulation of fecal matter in the bowel. The liver, a specimen of which I present, was tinged a deep yellow. In fact, all the tissues were tinged with bile pigment.

DR. THOS. SCOTT:—The patient, aged 30, was a man of fine physical development. He was taken sick on Sunday night, 24th of March, and seen by me first on the 25th. The abdomen was then tense, and the stomach irritable; constant vomiting and great thirst. The bowels had not been moved for several days, and I ordered an enema, at first without effect. After re-

peated injections, numerous scybala were removed followed by a pretty large evacuation of dark offensive fecal matter, with great relief to the patient. Ordered sinapisms to the abdomen, followed by hot fomentations, and opiates internally. He rested well that night, and seemed much relieved next morning. Repeated the enema and from this on his bowels moved freely enough; healthy, well-formed evacuations, but deficient in bile. There was still great tenderness over the abdomen. Under the influence of calomel in small doses, with opium and leeches over seat of inflammation, his stomach was quiet, the tenderness subsided, and the temperature fell from 102° F. to 99° F. One morning, while upon the night-chair, he complained of faintness, and sudden pain in the right iliac region. A blister and hot poultices relieved this. After two or three days he again had sudden severe pain in this region. Dr. Prewitt then saw the case with me. The patient was kept on quinine, morphine, hot fomentations and milk diet. Some improvement took place, but later a severe hæmorrhage from the bowels occurred, and the patient never rallied from the consequent prostration, succumbing, on the 27th day of his illness. He had had a somewhat similar attack, of less severity, some years before, which his physician had pronounced rheumatism of the bowels.

DR. PREWITT:—I fully concurred with Dr. Scott in the diagnosis and treatment of this case. But it has been my experience many times to find practitioners in similar cases, that is, cases of inflammation in the ileocecal region, using their utmost endeavors to secure a movement of the bowels, and not content with the use of enemata, resorting to the most active purgatives. Of course there is constipation, but that constipation is due to local inflammation, not the cause of it. Treatment should be directed to the control of the inflammation and local irritation, when the constipation will readily yield to the mildest laxatives. Active purgatives may effect a movement of the bowels, but they do it at the expense of intensifying the local inflammation and hazarding the life of the patient. What I would lay stress upon is that when called to a patient with pain and tenderness in a fixed region of the abdomen, the existence of constipation is now an evidence of fecal accumulation, not an indication for the use of active purgatives, but the reverse. Fecal accumulation, *per se*, does not give rise to inflammation, and even where this accumulation exists it is not best treated by active purgatives. It would be like corking up the bowel from below and endeavoring to force out the obstruction by exciting the peristaltic action above. Removal by enema from below first, and laxatives after would be the treatment, so that in every aspect of the case, whatever be the cause of the obstruction, whether it be an intussusception, a local inflammation, or *simple fecal impaction*, the use of active or violent purgatives is injudicious.

DR. WM. JOHNSTON :—From the history of this case I regard it as one of "typhlitis stercoralis," dependent upon an impacted condition of the colon with fecal matter. The symptoms in these cases are generally so plain that there can be no mistake. There is a history of constipation; you can often feel the fecal accumulation in the bowel. The local irritation becomes inflammation, and this may extend to the peritoneum—the whole series of symptoms having their origin in fecal impaction about the caput coli. To effect a cure you must remove the cause. After the removal of the fecal matter, opium may be used with great benefit to subdue the inflammation.

DR. HODGEN :—I think impaction does not occur except where the intestine has become more or less inflamed. There is always a loss of power from some cause. Impaction may occur from simple torpidity of the intestine, but it would not come on as it did in this case. In a healthy person there must be some degree of local inflammation to precede the impaction producing paralysis of the intestine at the site of the inflammation. The proper treatment from the outset would be to allay the inflammation which causes the paralysis, and thus prevent the impaction.

DR. NEWMAN :—I think we may have fecal impaction without previous disease, unless a torpidity of the nervous system constitutes disease. It may be the result of obstinate constipation, or arise from neglect without being preceded by inflammation.

I am inclined to agree with Dr. Johnson, that the disease arose in consequence of fecal obstruction leading first to inflammation of the bowel at the site of irritation, then extending to the peritoneum and subsequently involving the liver. The liver, as we know, receives its supply of blood from the abdominal viscera through the portal vein, and the vitiated condition of the blood derived from the inflamed bowel and peritoneal coverings, doubtless led to its involvement.

ARKANSAS STATE MEDICAL SOCIETY.—THIRD ANNUAL SESSION,
HELD AT FORT SMITH.

The Third Annual Session of the State Medical Society convened in Adelaide Hall, in the city of Fort Smith, Wednesday morning, May 1st, 1878. It was called to order by Dr. E. R. DuVal, Chairman of the Committee on Arrangements. The Rev. W. A. Sample, of the Presbyterian church, then offered prayer.

The Secretary then read the report of the Committee on Credentials, which was, on motion, adopted.

DELEGATES.

Phillips County Society—D. A. Linthicum, J. H. Vineyard. Chas. E. Nash, W. W. McAlpine, F. N. Burke. Northwest District Society—John M. Lacy, J. W. Clark, W. L. Cathey, J. G. Eberle. Benton County Society—B. F. Shippley. Crawford County Society—B. M. Hughes, H. Pernot. Fort Smith Society—J. H. T. Main, J. E. Bennett. Sebastian County Society—W. F. Blakemore, J. W. Breedlove, J. T. Booth. Washington County Society—H. D. Wood, B. F. Fortner. Jefferson County Society—S. W. Jones, J. T. Clegg, J. T. Hamilton, R. Brunson. Little River County Society—W. H. Hawkins. College of Physicians and Surgeons—J. H. Lenow, E. Bentley, C. D. Milner, T. E. Murrell.

PERMANENT MEMBERS.

Phillips County—A. A. Horner. Pulaski County—P. O. Hooper, R. G. Jennings, L. P. Gibson, E. T. Easley. Washington County—W. B. Welch, C. S. Gray, F. N. Littlejohn. Lonoke County—Isaac Folsom. Logan County—J. S. Shibley. Independence County—W. B. Lawrence, D. C. Ewing. Sebastian County—W. W. Bailey, E. R. DuVal, A. Dunlap, H. W. Fannin, F. M. Mottu, C. W. Talliaferro. Hempstead County—A. N. Carrigan. Crawford County—C. F. Brown, L. C. White. Johnson County—W. C. Montgomery. Benton County—T. W. Hurley.

NEW MEMBERS.

Saline County—T. A. Harvey. Phillips County—C. E. Nash, W. W. McAlpine. Pulaski County—E. Bentley, C. D. Milner, J. I. Hale, W. A. Cantrell, M. Harrison, F. E. Pope. Benton County—J. W. Clark. Crawford County—B. M. Hughes. Sebastian County—W. F. Blakemore. Logan County—T. D. Nichols, W. H. Butler. Howard County—M. C. Boyce, J. S. Cowling. Jefferson County—J. T. Hamilton, S. W. Jones. Craighead County—J. H. Kitchens. Franklin County—E. M.

Blackburn. Prairie County—W. W. Hipolite. Ouachita County—G. W. Hudson. Conway County—A. Davis.

The Secretary stated that there had been a protest presented against the admission of delegates and members of the Hot Spring and Garland County Society, which was referred to the Judicial Council.

The Mayor of Fort Smith was then introduced, who extended the hospitalities of the city in a very feeling and pertinent address.

Dr. J. H. T. Main, on behalf of the Sebastian County Society, delivered an address, cordially welcoming the members of the State Society to their beautiful Border City. He paid a feeling and merited tribute to the distinguished deceased medical gentlemen of that place, mentioning by name several, who now "sleep the sleep that knows no waking." He expressed his gratification at the large number in attendance; spoke of the long distance many members had traveled to participate in the deliberations of the Society, regarding their presence as the best evidence of their interest in the success of organized medicine; and closed his address by again welcoming the members to their hearts and homes during their sojourn in the city.

Dr. R. G. Jennings responded on the part of the members of the State Society in a few well-timed and appropriate remarks. He spoke of the cordial welcome received, the liberality of the citizens, the beauty of the town and its environs; alluded to the pathetic story of the "Fine Old Arkansas Gentleman;" the beautiful women that graced the occasion; the object of their visit; the interest in medical science manifested, and most feelingly expressed the thanks of the members for the warm greeting given them.

Dr. A. N. Carrigan, President, was then introduced, and delivered the annual address. He said the position he occupied was given more on account of his geographical location than for any superior ability he possessed. He should observe parliamentary rules only so far as it was necessary to preserve order and decorum in debate. He trusted that the Society had higher aims than mere legislation; that as a class physicians were not devoted to selfish aims. He congratulated the Society upon the favorable auspices that surrounded them at this meeting; spoke of our standing before the American Medical Association; referred to the late struggle before this body, of the success we had met with, and the good that had resulted to medical science throughout the State by the interest awakened through the agitation caused by the rival effort for recognition. That more interest had been manifested by the physicians in Arkansas in organized medicine in the last three years than there had been previously in the former ten years; that now he thought he could discern that unity and fraternity of action necessary to our future prosperity; that we were not striving after the mastery, but after the truth.

He spoke of malarial influences throughout the State that would probably be relieved by proper hygienic measures, and for this object recommended the establishment of a Board of Health by the General Assembly of the State. He criticised the action of the last Legislature in their non-action on this important measure, and trusted that something might be accomplished looking to this end in the future. Of the six or seven thousand who annually die in this State, fully one-fourth might be saved if proper sanitary precautions were exercised; that the profession of the State are not responsible for this annual loss to our population. Finally, the Society in the future will be just what the physicians choose to make it. That we have done something to elevate the standard of medicine in Arkansas is apparent; that there is much yet to be done is equally evident, which we can only hope to accomplish by persistent, united, harmonious efforts.

On motion of Dr. P. O. Hooper, the above addresses were referred to the Committee on Publication.

Charges and specifications presented by Drs. T. W. Hurley and B. F. Fortner against certain members of the Hot Springs Society for unprofessional conduct, were read and referred to the Judicial Council.

Adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

Society was called to order.

Dr. P. O. Hooper moved to suspend the order of business for the purpose of electing applicants for membership. Carried.

Dr. D. A. Linthicum moved that the Secretary cast the vote in accordance with the previous motion, which was done and the applicants were unanimously elected.

The regular order of business was then resumed.

Dr. J. E. Bennett read a report of a case of ptosis of the right eyelid and asked the opinion of the members as to cause and treatment.

Dr. T. E. Murrell read an article on Chronic Granular Conjunctivitis, causes and treatment.

On motion of Dr. J. H. Lenow, these papers were referred to Committee on Publication.

Dr. R. G. Jennings read a paper on Conservatism in Surgery.

Dr. J. T. Clegg moved that the above paper be laid over until to-morrow evening for discussion.

After a general discussion and verbal reports of cases by Drs. E. Bentley, S. W. Jones and H. D. Wood, the Society adjourned to 8 o'clock P. M.

EVENING SESSION.

Society met at the hour named.

Dr. E. R. Du Val, Secretary of the Judicial Council, informed

the President that he was ready to make a report from the Council. He then read the following reports :

OFFICE OF JUDICIAL COUNCIL,)

May 1, 1878.)

The following preamble and resolution was this day adopted by the Judicial Council, viz :

WHEREAS, The protest of Drs. D. A. Linthicum, A. A. Horner and J. H. Vineyard, of Phillips County, against the admission or registration of any member or delegate from the Hot Springs and Garland County Medical Society, having been, after a patient and considerate hearing of all the evidence, fully sustained and established ; therefore, be it

Resolved, That no member of the Hot Springs and Garland County Medical Society be allowed to register, or delegate therefrom be admitted at this meeting of the Society.

(Signed,)

E. R. DE VAL, M. D., Secretary.

OFFICE OF JUDICIAL COUNCIL,)

May 1, 1878.)

The following preamble and resolution were this day adopted by the Judicial Council, viz :

WHEREAS, The charges and specifications preferred by B. F. Fortner, M. D., of Washington County, and Thomas W. Hurley, M. D., of Benton County, against Drs. P. H. Ellsworth, O. A. Hobson, G. W. Lawrence, S. W. Franklin, and E. A. Shippey, of Hot Springs, Garland County, having been, after a considerate hearing and examination of all the evidence pro and con, fully proven and sustained ; therefore, be it

Resolved, That the aforesaid Drs. P. H. Ellsworth, O. A. Hobson, G. W. Lawrence, S. W. Franklin and E. A. Shippey, *be expelled* from all the rights, privileges and immunities of the State Medical Society of Arkansas.

(Signed,)

E. R. DE VAL, M. D., Secretary.

The Secretary read the report of the Delegates to the American Medical Association, which met at Chicago in June last, signed by J. E. Woods, Chairman.

The reports of the Secretary, Treasurer, Librarian and Publishing Committee were read and referred to the proper committees.

Dr. R. G. Jennings, Chairman of the Committee on Vital Statistics, read a carefully prepared report upon this subject of the city of Little Rock.

Dr. G. G. Baker's report of Phillips County Vital Statistics was also read, both of which were referred to the Committee on Publication.

The Secretary read several communications from medical gentlemen abroad, making inquiries as to special surgical operations. Also, a letter from the Secretary of the American Medical Association, in regard to appointment of Delegates to the meeting in Buffalo.

Dr. E. T. Easley apologized for not having his address on Surgery prepared, but gave a synopsis of his views on the subject of anesthesia, which elicited considerable debate.

Dr. C. S. Gray moved to adjourn until to-morrow at 9 o'clock.

SECOND DAY.—MORNING SESSION.

Meeting called to order.

The Secretary read report of Special Committee to audit the Treasurers's books which was adopted.

Dr. W. B. Welch moved that a committee of five be appointed to suggest names for officers for the ensuing year.

Dr. S. W. Jones objected, stating that the Constitution required nominations to be made in open session.

After discussion of the motion by Drs. Jones, Welch, Linthicum, Fortner and Hooper, an amendment was offered by Dr. DuVal to refer the subject to the Judicial Council for immediate action.

The Secretary stated that the Committee on Necrology had failed to report. Dr. Linthicum, the only member of the committee present, stated that he would prepare a report in time for publication in the transactions.

Dr. Hurley offered an amendment to the constitution making a provision for the election of officers.

The Secretary of the Judicial Council reported that it was not unconstitutional to appoint a special committee to suggest names for officers.

The President appointed Drs. Fortner, Folsom, Hooper, Main and Hamilton, a committee to suggest names for officers.

Dr. Fortner moved that a committee of five be appointed, to prepare an address to the profession of the State, inviting them to become members, and that Dr. S. W. Jones be made chairman of this committee.

Motion prevailed.

Dr. DuVal presented as a matter of interest the triplets of Mrs. W. M. Cravens, two boys and one girl, three years old. They are bright and healthy children.

The Secretary called the roll of members and requested to be informed of any deaths, changes of location, etc.

The committee appointed to suggest names for officers for ensuing year, reported as follows:

For President, A. A. Horner, of Phillips county. For Vice-Presidents, T. W. Hurley, of Benton county; W. H. Hawkins, of Little River County; J. S. Shibley, of Logan county; Isaac Folsom, of Lonoke county. For Secretary, R. G. Jennings. For Assistant Secretary, L. P. Gibson. For Treasurer, A. L. Breysacher. For Librarian, J. H. Lenow.

Next place of meeting, Little Rock, the first Wednesday in May, 1879.

The Secretary then proceeded to ballot and the above named officers were elected.

Dr. A. A. Horner, being escorted to the chair, made a few very appropriate remarks.

Adjourned to 2 o'clock.

Society met at the hour appointed. Dr. Hawkins read a report of case of amputation at upper third of femur for diffused traumatic aneurism. Dr. Hawkins also read a communication on algid pernicious fever. After a very lengthy discussion of the paper by Drs. DuVal, Vineyard, Wood, Welch, Hawkins and others, it was referred to Committee on Publication.

Dr. T. E. Murrell read a report of deafness from a singular cause, with treatment and result. Paper referred to Publishing Committee.

Dr. Jennings' paper on Conservatism in Surgery was then discussed and referred to the Committee on Publication.

The following articles were then read, and referred to the Committee on Publication:

Case of Conservative Surgery, by Dr. C. W. Taliatferro.

Treatment of Fracture of Femur, Case of Opium Habit of Four Years Standing—recovery, by Dr. J. E. Bennett.

Dr. J. A. Vineyard reported a case of Strychnia Poisoning—recovery.

Dr. Carrigan addressed the body, closing the session, followed by a short address by the President elect, Dr. Horner.

The committees for the ensuing year were then announced by the President as follows:

Judicial Council.—W. B. Welch, E. R. DuVal, F. N. Burke, P. O. Hooper, A. N. Carrigan, R. Brunson, D. C. Ewing, E. T. Dale, D. H. Stayton.

On State Board of Health.—D. A. Linthicum, A. N. Carrigan, B. F. Fortner, J. E. Bennett, S. W. Jones.

On Scientific Communications.—W. H. Hawkins, C. S. Gray, E. M. Blackburn, T. D. Nichols, A. Dunlay.

On Practice of Medicine.—C. E. Nash, E. Bentley, B. M. Hughes, P. O. Hooper, W. W. Bailey, C. F. Brown.

On Gynecology.—T. J. Pollard, J. H. T. Main, J. H. Vineyard, C. M. Blocker.

On Vital Statistics.—R. G. Jennings, C. S. Gray, G. G. Baker, W. B. Lawrence, R. B. Christian.

On Publication.—R. G. Jennings, A. L. Breysacher, T. E. Murrell, L. P. Gibson.

On Necrology.—H. D. Wood, H. Pernot, J. T. Clegg, C. D. Milner, W. W. McAlpine, B. S. Medlock.

Delegates to American Medical Association.—W. B. Welch, P. O. Hooper, D. A. Linthicum, E. R. DuVal, R. G. Jennings, R. Brunson, W. W. Bailey, J. E. Bennett, J. S. Shibley, A. N. Carrigan, F. N. Burke, S. W. Jones, W. H. Hawkins, C. S. Gray, B. F. Fortner, D. H. Stayton.

Committee on Arrangements.—E. H. Skipwith, George C. Hartt, W. A. Cantrell, E. V. Duell, F. E. Pope, L. P. Gibson.

On Credentials.—A. L. Breysacher, T. E. Murrell, J. H. Lenow.

On motion, the Society adjourned to meet at Little Rock on the first Wednesday in May, 1879.

R. G. JENNINGS,

A. N. CARRIGAN,

L. P. GIBSON, Secretaries.

President.

THE MEDICAL ASSOCIATION OF THE STATE OF MISSOURI.

The Medical Association of the State of Missouri met at Sweet Springs, on May 21, 1878, at 10 A. M. Dr. Essig, of Plattsburg, took the chair, and stated that in the absence of Dr. Johnson, of Platte City, President of the Association, it became his duty, as First Vice-President, to call the members to order.

Prayer was then offered by Dr. Yantis, of Brownsville, a resident there for thirty years, and original owner of the springs.

Dr. J. M. Pelot, of Brownsville, was then called forward, and delivered the following address:

MR. PRESIDENT AND GENTLEMEN:—In extending to you a welcome to Sweet Springs, which I beg you to believe more cordial than I can find words to express, I speak not only in the name of my brother physicians of Brownsville and Saline county, but also in the name of the gentlemen whose guests you are to-day. It were mere affectation to deny that this assembly, so much larger than usual, is significant of something more than usual—that something, let me frankly say, being a personal inspection and study, so far as practicable, of the waters which are beginning to attract attention in all parts of the State. It is particularly appropriate that the members of our noble profession, whose habits have developed the instincts to alleviate human suffering, and who are ever found foremost in unselfish devotion to the cause of humanity, should interest themselves in whatever means Providence, in His bounty, has bestowed to that end.

The Medical Association of Missouri, and the Sweet Springs Company, sustain no equivocal relations to each other in the minds of candid men. While the one is honestly seeking knowledge by the aid of such lights as are legitimate and attainable, the other, feeling bound to furnish all facilities in their possession for gaining such knowledge, asks in return no authoritative expression from this Association in its favor.

May your deliberations be free and harmonious, and productive of mutual friendship and instruction. May the few hours

you spend here be pleasant, and may we all long remember with peculiar gratification the visit of the Medical Association to Sweet Springs. [Applause.]

The report of the Committee on Arrangements being then called for, Dr. Lester Hall, of Marshall, stated the Sweet Springs Company had left them but little work to do. The committee had appealed to the railroads several times for commutation fare but the companies held that, in consideration of the State law, recently gone into effect, they could make no reduction.

On motion the report was accepted.

Dr. Conkwright, of Sedalia, called the roll.

On motion the reading of the minutes of last meeting was dispensed with, as they had been printed and circulated among the members.

It was moved that a committee of five be appointed to make nominations for officers for the ensuing year.

Drs. H. H. Mudd, Spencer, Brent, Richmond and Hall were appointed such committee.

After an interval of about half an hour, the committee returned and reported as follows:

For President, E. W. Schauffler, Kansas City. First Vice-President, G. M. B. Maughs, St. Louis. Second Vice-President, W. P. King, Sedalia. Third Vice-President, W. Humphreys, Mexico. Fourth Vice-President, J. M. Pelot, Brownsville. Fifth Vice-President, Jacob Geiger, St. Joseph. First Recording Secretary, A. J. Steele, St. Louis. Second Recording Secretary, G. A. Moses. Corresponding Secretary, J. B. Hall, Marshall. Treasurer, A. B. Sloane, Kansas City.

The report was, on motion, accepted.

On motion the President *pro tem.*, cast the vote for the candidates in nomination, and they were declared elected.

A few appropriate remarks were made by the retiring and incoming Presidents, after which the Association proceeded to business.

Dr. Maughs, of St. Louis, read an interesting and instructive paper on Displacement of the Uterus, which was discussed by a few who had given special attention to this subject.

Dr. Spencer, of St. Louis, read an article on the Complication of the Ear in the Exanthematous Fevers; this paper received all the credit it deserved.

Dr. Porter's paper on Tubercles in the Larynx, elicited no discussion; nevertheless, it was one of the best read at the meeting. This, and two papers on the ear will receive a somewhat extended review after the publication of the transactions, which is soon expected.

Dr. Richmond, of St. Joseph, read a paper, giving a very interesting history of an operation for the relief of Traumatic Closure of the Entire Vagina. The accident, which occurred when the patient was a child, had really unsexed the woman;

totally preventing the marital relations. The operation restored the vaginal canal to its full length, so that the menstrual flow, in a few months afterwards, appeared for the first time in her life, and continued to do so, at the usual regular periods. The newly formed vaginal canal remained the same, as to length and diameter for about two years, during which period she lived a happy, contented wife. About this time he was called to attend her on account of severe pain attending her menstruation, and found that the vagina was again occluded to about its entire extent, and that the pain was occasioned by an abscess containing menstrual fluid. The abscess this time opened within the bladder, as these abscesses recurred with each menstrual period, and was caused solely by the functional operations of the ovaries. Dr. Richmond desired to perform Battey's operation, and by thus removing the cause of distress save the woman's life for that which was almost certain to occur, and which finally did occur, namely, the opening of the abscess into the abdomen, as was feared by him. To this operation the patient would not consent.

It was evident from the discussion which followed the reading of the paper, that there were but few friends of Battey's operation present. Dr. Richmond, in his paper, strongly expressed his regret at his not having opportunity to perform the operation, while others thought as he had been remarkably successful in giving the woman her sex, making it possible for her to be a wife, her refusal to the removal of the ovaries was fortunate for him, as the proportion of success to the number of operation was not at all inviting.

Certainly this was a case in which, if the operation possessed *any* merit at all, it would have improved the patient's chances for recovery. In other words, if the removal of the ovaries is *ever* justifiable, this operation should have been performed on this woman.

Dr. Montgomery, of St. Louis, read a paper on Bright's Disease of the Kidneys. It was evident that the author had been studying the complaint for some time.

Dr. Trader, of Sedalia, read a paper on Diabètes Millitis, which referred wholly to the case of a physician who died of this disease.

Dr. Todd, of Kansas City, read a very carefully prepared paper on Precipitate and Precipitated Labor.

The lack of space in THE JOURNAL prevents even noting the title of the articles read. The general expression was, that they compare very favorably with the papers of any previous meeting.

It was repeatedly stated by the President and by others, that, in justice both to the authors and to the listener, more time for discussion ought to have been allowed on each subject, but the shortness of the time—two days—would not allow it. At the next meeting, however, more time will be given, as three days.

will be devoted to the reading and discussion of papers, if necessary. Another step in the way of progress was made in directing the Recording Secretary to employ a Stenographic Reporter to report all the debates. This will greatly enhance the interest of the meeting, and will double the value of the transactions.

It is quite refreshing after one has listened to the reading of several very interesting and instructive papers, to have a member get on the floor who can, while he is giving good sound sense, bring the house down (figuratively) by his serio-comic description of his case. Every Society ought to have its (W. P.) King.

The following standing committees were announced by the President.

Committee on Arrangements—Drs. Maughis, Pelot and Hall. Committee on Credentials—Bryant, Todd, (Kansas City), and McKinney. Committee on Scientific Communications—Humphreys, Porter, (St. Louis) and Essig. Committee on Progress of Medicine—Alleyne, Lester and Arnold. Committee on Progress of Surgery—Prewitt, Borek and Richmond. Committee on Medical Education—Garnett, Johnson and Brown. Committee on Ethics—Trader, Alexander, Brent and Steele.

Dr. L. Hall, Marshall, moved that the assembly meet the third Tuesday of May next, provided the time does not conflict with the meeting of the American Medical Society. Carried. The President and Secretary retain the privilege to change this time, if deemed advisable.

Dr. Steele moved that next year the Association remain in session three days, if necessary.

The following resolutions were adopted:

Resolved, That this Association is not responsible for the individual opinions of its members.

Resolved, That the President appoint a committee of three to prepare and present to the next legislature a petition requesting that body to take the necessary action for the establishment of one or more inebriate asylums in the State.

Resolved, That the Recording Secretary be instructed to notify former members by card, that on payment of fifty cents they will be furnished with copies of the proceedings; and on payment of \$3.00 their name will appear on the roll.

WHEREAS, The members of the Medical Association of the State of Missouri have by the kindness of the proprietors of Sweet Springs, been hospitably entertained and provided for during the present session; therefore be it

Resolved, That the members of this Association extend their thanks to their hosts for their disinterested efforts, and will remember with pleasure the many enjoyable features of this occasion.

The question was raised as to where the Association should

meet next year. After considerable discussion, some arguing in favor of Columbia and others for Sweet Springs, a vote was taken, which resulted 56 for Sweet Springs, to 34 for Columbia.

Clinical Reports from Private Practice.

A CASE OF LITHOTOMY. By A. V. BAXES, M. D., of St. Joseph, Missouri.

L. H. Phelps, of Blue Rapids, Kansas, aged 48 years, of very unhealthy appearance, applied to me for relief, suffering from some obscure disease of the bladder. As his symptoms, although obscure, pointed to the existence of a stone, I introduced the sound and discovered one. March 28th was appointed for the operation. The patient was chloroformed, and in the presence of Drs. Craig, Christopher and Geiger, the left lateral operation of Prof. Gross was performed. The incision was about two inches in length, and as the prostate gland was very much enlarged it was notched with a probe-pointed bistoury and by gentle dilatation the stone was extracted; the calculus of the mulberry variety, about the size of an almond. The bladder was then thoroughly cleansed with carbolized water and the patient placed in bed. The urine passed by the natural channel on the fifth day; he went home on the 14th day with wound healed with exception of cutaneous portion. Heard from Mr. Phelps yesterday (May 14th); is doing hard work on farm and says he is a new man.

EXTIRPATION OF PAROTID GLAND.—A. V. BAXES, M. D.

Martha Harrison, aged 22 years, consulted me April 15th, 1878, in regard to a tumor the size of an orange on the left side of the face, which had been gradually enlarging for five years.

After explaining to her parents the dangers of the operation and the probable paralysis following, I appointed April 18th for its removal. A large crucial incision was made over the site of the tumor and the cutaneous flaps carefully dissected back under a strongly carbolized spray. The base of the gland was then seized with a tenaculum and the dissection advanced through

medium of finger nails and handle of scalpel from below upwards. No hæmorrhage of any amount occurred, only a branch of the transverse facial artery being severed, which was promptly ligated. The flaps were then approximated and sustained by sutures of carbolized catgut.

A compress was then applied saturated with carbolized oil and the patient placed in bed. The wound healed entirely by the 20th day without any untoward symptoms. The tract of wound was syringed with a weak solution of carbolic acid three or four times a day, the compress being applied firmly afterward. Up to date, (May 16) no signs of paralysis have taken place.

DEATH FROM CHLOROFORM. Reported for THE JOURNAL, April 29th, 1878. By W. P. MILLS, M. D., of Brownsville, Mo.

A few days ago I was requested to operate on a boy aged 16 years, for congenital phimosis. He was chloroformed by Dr. A. J. Parsons, who has often administered chloroform by inhalation, and, by the way, he is very cautious in the administration of this potent drug. Notwithstanding the great prudence, caution, and the general manner in which it was administered, just as the operation was completed, and without any indication of danger whatever, instantaneously—almost as quick as the explosion of gunpowder—respiration ceased, and a livid color overspread his face and in spite of all the usual restorations he was soon dead; in fact it seemed as if he was struck dead in an instant. Immediately upon the supervention of these alarming symptoms his head was lowered, cold water thrown into his face and artificial respiration induced. Under the influence of this treatment some improvement was manifested, and for a few seconds it seemed that the danger was over, but suddenly all the alarming symptoms before described were again exhibited and death was the inevitable result. Not more than three drachms of chloroform was used and of this not more than one and a half or two drachms were actually inhaled, and the patient was not deeply under its influence at any time during the operation which, as a matter of course, was very brief. Nitrite amyle, electricity and hypodermic injections of whisky were all brought into requisition, but, as the sequel proved, were of no avail.

The most noteworthy feature of the case was the very sudden supervention of the alarming symptoms, for according to my information in regard to chloroform poisoning, there is generally some warning given of its deleterious influence.

Editorial.

THE WRONG AND DANGER OF CONSIGNING THE INSANE IN POOR HOUSES.

The *Globe-Democrat* misses the real point in its criticism of the 9th of April, on the Stueben County, N. Y., Poor House disaster.

There were confined there mainly the so-called harmless(?) insane, epileptic and idiotic. The man who set fire to the building was insane, but supposed to be harmless. He was locked in his room, probably to keep him from wandering about the premises at night. He set fire to his own room and himself locked in it.

The real point worthy of special notice is this:

The so-called harmless insane, idiotic and epileptic require too much looking after to be consigned to a County Poor House, to mingle promiscuously with the sane of mind.

The only proper place for these unfortunates, is in the Asylum for the Insane, where precautions are taken, both in the fire-proof construction of the building, and in the constant supervision of attendants, against the possibility of destruction by fire.

Besides the injustice and inhumanity of taking these unfortunates from the medical and personal surveillance of the asylum, where they may have such medical and other assistance as their condition of chronic mental infirmity may require, it is a task which those really familiar with the true mental state and the many singular impulses which are liable to possess the chronic insane epileptic and idiotic, might not like to take. To consign them to the common Poor Houses, is both unjust and unsafe.

So far back as 1851, that eminent body of men, the Association of Superintendents of American Asylums for the Insane, declared it to be "the duty of the community to provide and suitably care for *all classes of the insane*, and that in order to secure their greatest good and highest welfare, it is indispensable that institutions for their exclusive care and treatment, having a resident medical superintendant, should be provided, and that it

is improper, except in extreme necessity, as a temporary arrangement, to confine insane persons in County Poor Houses or other institutions."

Besides the injustice and inhumanity of making the poor house the home of the so-called harmless class of insane, idiotic and epileptic, who are liable to be abused and imposed upon in every way by the pauper with less impaired intellect, there is always more or less danger.

In our county farm there is a large number of the so-called harmless insane, epileptic and idiotic.

Those who are responsible for these unfortunates being in the wrong place, should lose no time in providing a proper place for them, and additional fire-proof buildings, with proper supervision, personal and medical attendance in connection with the Asylum for the Insane.

Our Poor House is above the average, and with some architectural changes and a regular asylum organization, might answer very well as an auxilliary asylum.

The poor, not mentally afflicted, might be placed elsewhere than with the harmless (?) insane, epileptic and idiotic.

BAD MEDICINES.

Bad medicines are a rope of sand to the patient and a deception to the prescribing physician. The former is enticed, by its reputation, to rely on it for its promised relief; the latter's reputation is compromised by its failure to give this relief. Dr. L. P. Yundall, in his *Medical News*, makes the following remarks on this subject:

"A year since, when dialysed iron was a novelty, I commended it in the *News* as a most valuable addition to the materia medica. Twelve months of additional experience has confirmed my faith in its excellence. The object of this note is to call attention to the great variety of spurious preparations sold under the name of dialysed iron. In this city I have found nine varieties of so-called dialysed iron. Some of these were manufactured here, but most of them were made elsewhere. Genuine dialysed iron is nearly tasteless. It has the faintest possible saline flavor and a mere suspicion of roughness. Slightly diluted, its taste recalls that of fresh blood. It is not in the least unpleasant, and does not blacken the teeth or tongue. It seldom or never produces any gastric disturbances or headache, and very rarely constipation. It is exceedingly reliable and rapid as a tonic."

Book Notices and Reviews.

ANCIENT LIFE HISTORY OF THE EARTH. A comprehensive outline of the Principles and Leading Facts of Palaeontological Science. By H. ALLEYNE NICHOLSON, M. D., D. Sc., M. A., Ph. D., etc., etc. pp. 407. Appleton & Co., Publishers.

The special object of this work is to give to the reader that view of the life-history of the earth which is presented by the fossils which characterize the various geological formations. The work is done in a very logical and methodical manner, and the style and diction are such as to make the reading of the book a pleasurable as well as an instructive entertainment. The reader will find in it charts or maps of the various strata that are regarded as constituting the different formations which divide the history of the earth into distinct geological periods. The fossils which characterize each formation are given under the chapter which treat of these formations, the drawings of which enable the reader to see, to that extent, what fossils are characteristic of each period of the earth's life history. The reader will observe from it a very just, adequate and comprehensive view, not only of geology, but of paleontology, and will find these subjects so well presented as to leave him but little to wish for.

The author is a little on both sides of the question relating to the successive introduction of new species during the various ages of the earth, finding, as he thinks, some facts which favor the theory of evolution, and some which do not; but on the whole seems rather inclined to evolution. This, however, detracts nothing from the interest and the value of the work, as the author has given facts and not theories. We cordially commend the book to our readers. C.

PRESCRIPTION WRITING. Designed for the use of Medical Students who have never studied Latin. By FREDERIC HENRY GERRISH, M. D., Professor of Materia Medica and Therapeutics in the Medical School of Maine, etc. Portland, Maine. Loring, Short & Harmon. 1878.

Students are often deterred from undertaking the labor needed to make them expert in this respect, from a mistaken idea of its magnitude. It is to help them in this very important but much neglected part of their medical work that this little book has been written. It is not designed to give instruction in the art of prescribing, but simply to teach those who know nothing whatever of the language of the little Latin which is essential to correct prescription writing, and to inculcate such

lessons on this subject as a considerable experience in teaching has shown to be desirable. The first part contains the rules to be observed in writing prescriptions; the second part presents all the words that are necessary for (though not all that may be used) in this exercise, so arranged as to best facilitate reference and the easy acquirement of a sufficient familiarity with their various forms.

CYCLOPEDIA OF THE PRACTICE OF MEDICINE (Ziemssen), Vol. XVII. General Anomalies of Nutrition and Poisons. By Prof. H. Immermann, of Basel; Prof. R. Boehm, of Dorpat; Prof. B. Naunyn, of Königsberg; and Prof. H. von Boeck, of Munich. [Translated by W. Bathurst Woodman, M. D., and J. Burney Yeo, M. D., of London; Edward S. Wood, M. D., of Boston; Charles Emerson, of Concord; Porter Farley, M. D., of Rochester; and A. Braxton Ball, M. D., and Elwyn Walter, Ph. D., of New York. Albert H. Buck, M. D., New York, Editor of American Edition. New York: Wm. Wood & Co., 1878. pp. 968.]

This volume is in keeping with the previous volumes. They are all very exhaustive. Prof. Immermann's part of the volume will, no doubt, be read with interest by the profession, but while they will find that the subject is treated very exhaustively, they will not see any thing particularly new in it.

Those of the profession who wish to study the poisons, will be well pleased with that portion of the work which treats of poisons, but for the most of us it will be kept as a reference on this subject.

We understand that the sale of these volumes is fully up to the anticipated demand.

Books and Pamphlets Received.

The Ophthalmoscope and its Revelations. By A. E. PRINCE, M. D., of Jacksonville, Ill. [From *College Rambler* for May.]

Automatic Cerebration as Related to Cerebral Localizations, with the Discussion thereon in the Association of Medical Superintendents of the American Institutions for the Insane. By J. K. BARDRY, M. D., of St. Louis.

Bathing, Cupping, Electricity, Massage. A Comparison of the Therapeutic Effects of Bathing, of Cupping or Atmospheric Exhaustion, of Electricity in the form of Galvanism and Faradism, and of Massage, in the Treatment of Debilities, Deformities and Chronic Diseases. By DAVID PRINCE, M. D., of Jacksonville, Ills. Reprinted from *American Practitioner*, February, 1878.

METEOROLOGICAL OBSERVATIONS.

By A. WISLIZENUS, M. D.

The following observations of daily temperature in St. Louis are made with a MAXIMUM and MINIMUM thermometer (of Green, N. Y.). The daily minimum occurs generally in the night, the maximum at p. m. The monthly mean of the daily minima and maxima added and divided by 2, gives quite a reliable mean of the monthly temperature.

THERMOMETER, FAHRENHEIT—APRIL, 1878.

Day of Month.	Minimum.	Maximum.	Day of Month.	Minimum.	Maximum.
1	41.5	65.5	18	63.0	82.0
2	44.0	62.0	19	62.0	77.0
3	49.0	52.0	20	61.0	78.5
4	45.5	65.0	21	62.0	79.5
5	47.0	67.0	22	65.5	71.5
6	46.5	61.5	23	69.0	70.0
7	46.0	66.0	24	52.5	67.5
8	54.0	64.0	25	50.5	65.0
9	57.5	75.0	26	47.0	57.0
10	45.0	68.5	27	49.5	59.0
11	45.0	71.0	28	49.0	67.0
12	55.5	82.0	29	52.0	73.0
13	54.0	68.0	30	54.0	78.0
14	55.0	81.0	31		
15	59.0	78.0			
16	57.5	82.0	Means	58.0	70.6
17	61.0	83.5	Monthly Mean	61.8	

Quantity of rain, 6.11 inches.

MORTALITY REPORT.—CITY OF ST. LOUIS.

FROM APRIL 14, 1878, TO MAY 11, 1878, INCLUSIVE.

Small-Pox	1	Inanition, Want of	Meningitis and En-	Cyanosis and At-
Measles	9	Breast Milk, etc.	cephalitis	electasis
Syphilis, Congen.	1	Alcoholism	Convulsions	Premature and Pre-
Scarlatina	3	Rheumatism and	Elephantiasis Gra-	ternatural Birth
Pyæmia	2	Gout	corum	Surgical Operations
Erysipelas	3	Cancer	Direct Effect of Su-	Deaths by Suicide
Diphtheria	3	Phthisis Pulmon.	lar Heat	Deaths by Accident
Melanconic Group	1	Bronchitis	Apoplexy	
Whooping Cough	1	Pleuritis	All Diseases of the	Total Deaths from
Typhoid Fever	4	Empyema	Brain and Ner-	all Causes
Typhoid Fever	3	Pneumonia	vous System	Total Zymotic Dis-
Cerebro-Spinal Fe.	2	Heart Diseases	Cirrhosis of Liver	cases
Remittent, Inter-		Anæmia	and Hepatitis	Total Constitution-
mittent, Typho-		Marasmus—Tabes	Enteritis, Gastro-	al Diseases
Malariæ, Conge-		Mesenterica and	Enteritis, Peri-	Total Local Dis-
stive and Sim-		Sepicæmia	tonitis, and Gas-	cases
ple, Continued		Hydrocephali and	tritis	Total Develop'tal
Fever	9	Tubercular Men-	Bright's Disease	Diseases
Puerperal Disor-	5	ingitis	and Nephritis	Deaths by Violence
Diarrhœa	5			

CHAS. W. FRANCIS, Health Commissioner.

COMPARATIVE MORTALITY RATES.

CITIES	Estimated Pop- ulation, July 1, 1878	Total Mortality for four weeks, ending May 11, 1878	Annual Death Rate per 1000 for the four weeks
New York	1,033,471	1,990	23.66
Philadelphia	576,118	1,477	25.46
Baltimore	549,438	793	14.86
St. Louis	500,000*	352	9.14
Chicago	460,000	185	13.70
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*Estimated population, May 1, 1877, 501,489.

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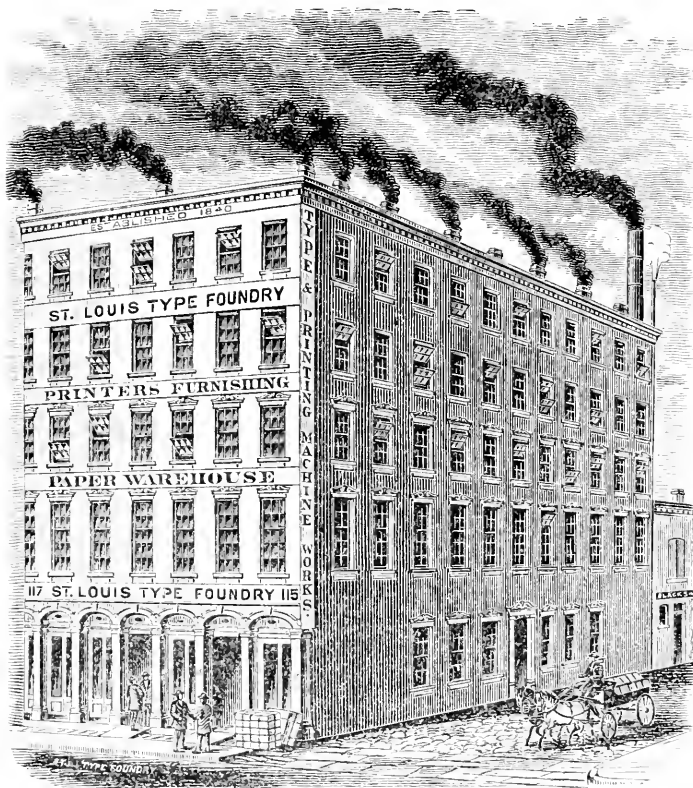
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The Preliminary Autumnal Term for 1877-1878 will open on Wednesday, September 19, 1877, and continue until the opening of the Regular Session. During this term, instruction, consisting of didactic lectures on special subjects and daily clinical lectures, will be given, as heretofore, by the entire Faculty. Students expecting to attend the Regular Session are strongly recommended to attend the Preliminary Term, but attendance during the latter is not required. During the Preliminary Term clinical and didactic lectures will be given in precisely the same number and order as in the Regular Session.

The Regular Session will commence on Wednesday, October 3, 1877, and end about the 1st of March, 1878.

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The Spring Session consists chiefly of Recitations from Text-books. This term continues from the first of March to the first of June. During this session, daily recitations in all the departments are held by a corps of examiners appointed by the regular Faculty. Regular clinics are also given in the Hospital and College building.

FEES FOR THE REGULAR SESSION.

Fees for Tickets to all the Lectures during the Preliminary and Regular term, including Clinical Lectures,	\$140.00
Matriculation Fee,	5.00
Demonstrator's Ticket, (including material for dissection,)	10.00
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FEES FOR THE SPRING SESSION.

Matriculation, (Ticket good for the following Winter),	\$ 5.00
Recitations, Clinics and Lectures,	35.00
Dissection, (Ticket good for the following Winter,)	10.00

Students who have attended two full Winter Courses of lectures may be examined at the end of the second course upon Materia Medica, Physiology, Anatomy and Chemistry, and if successful, they will be examined at the end of their third course upon Practice of Medicine, Surgery and Obstetrics only.

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Persons who hold no degree in arts or science must pass an examination for admission to this School, in Latin, in the elements of Physics, and in English. French or German will be accepted instead of Latin. The admission examination will be held June 24th both at Boston and at Cincinnati; on September 23d, at Boston only.

Instruction is given by lectures, recitations, clinical teaching, and practical exercises, distributed throughout the academic year. The year begins Sept. 26, 1878, and ends on the last Wednesday in June, 1879. It is divided into two equal terms, either of which is more than equivalent to the former "Winter session," as regards the amount and character of the instruction. The course of instruction has been greatly enlarged, so as to extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another in a just and natural order. In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory work is largely substituted for, or added to, the usual methods of instruction.

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At the end of the first year—Anatomy, Physiology, and General Chemistry.

End of second year—Medical Chemistry, Materia Medica, and Pathological Anatomy.

End of third year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Examinations are also held before the opening of the School, beginning September 23rd.

REQUIREMENTS FOR A DEGREE.—Every candidate must be twenty-one years of age; must have studied medicine three full years, have spent at least one continuous year at this School, have passed the required examinations, and have presented a thesis.

COURSE FOR GRADUATES.—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory, and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy; Surgery; Anæsthesia; Percussion, and Laryngoscopy; Ophthalmology; Dermatology; Syphilis; Psychological Medicine; Otology; Electro-Therapeutics; Gynecology; and Obstetrics. On payment of the full fee for the privilege of attending any of the other exercises of the Medical School, the use of the laboratories and library, and all other rights accorded by the University will be granted. Single branches may also be pursued. Graduates of other Medical Schools who may desire the degree of M. D. at this University will be admitted to examination for this degree after a year's study in the Graduate's Course. Examination on entrance not required.

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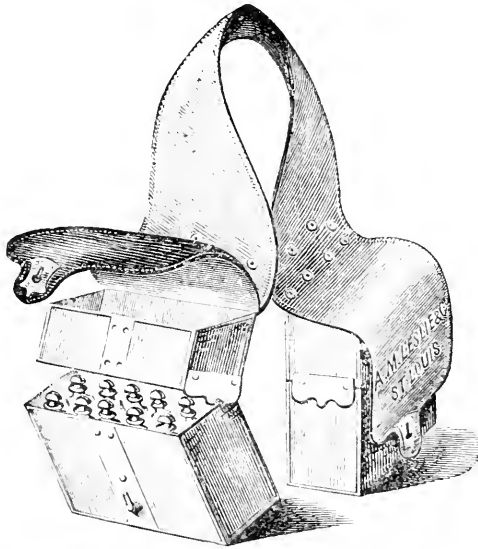
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